

FIG. 1

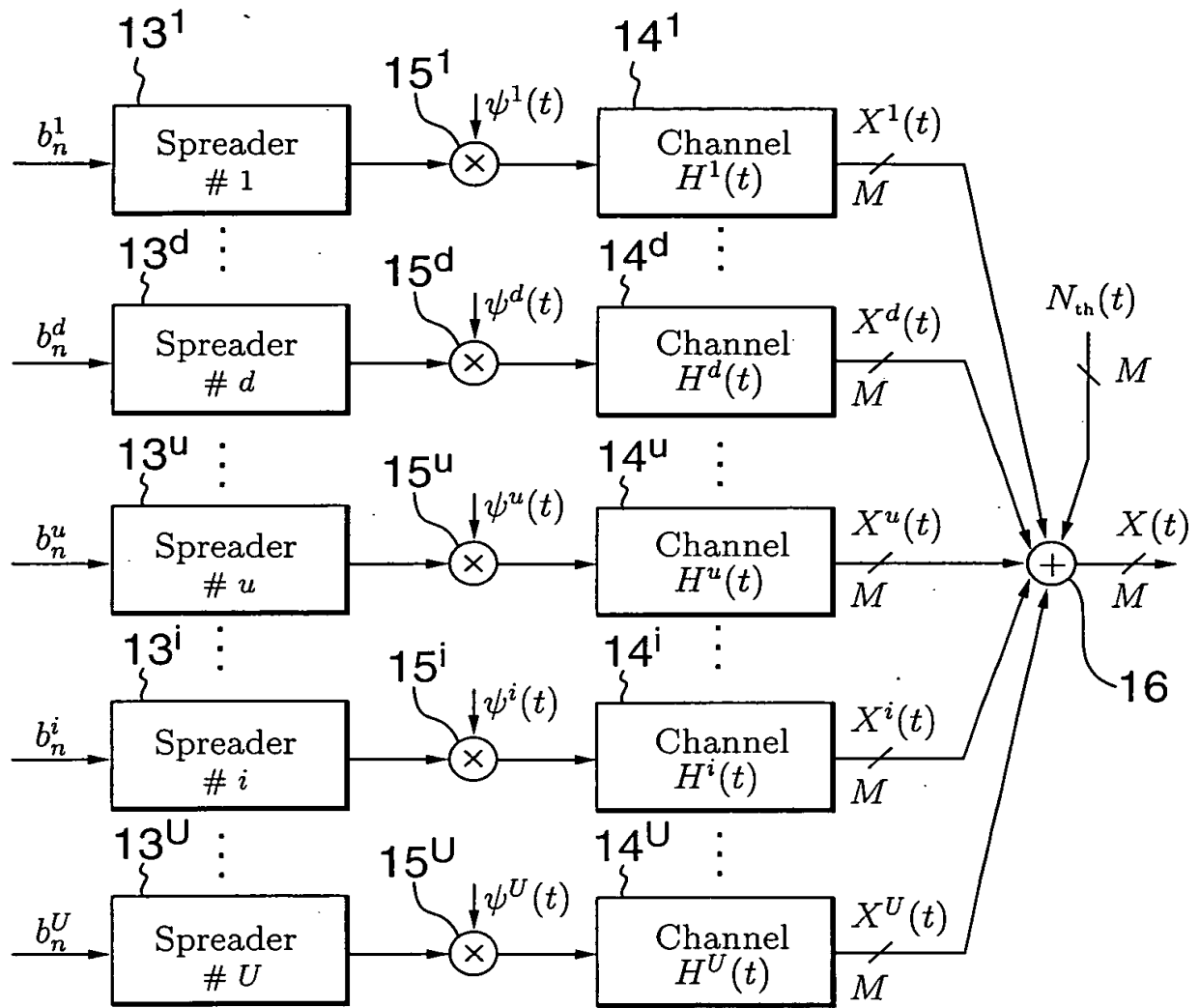


FIG. 2

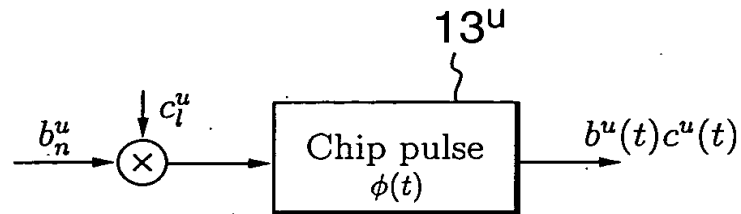


FIG. 3

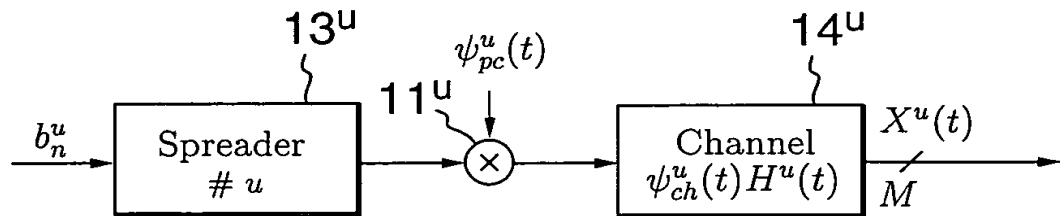


FIG. 4(a)

≡

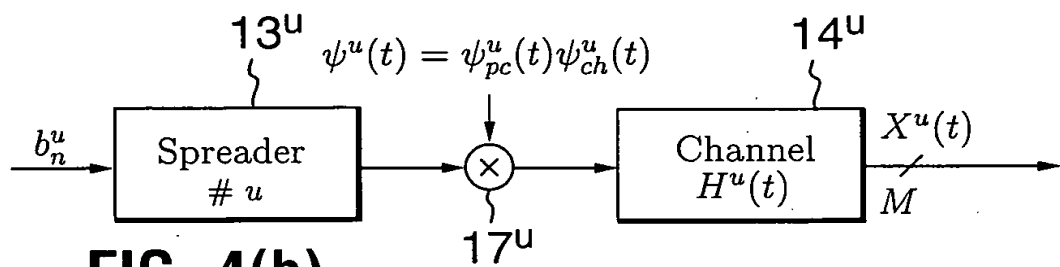
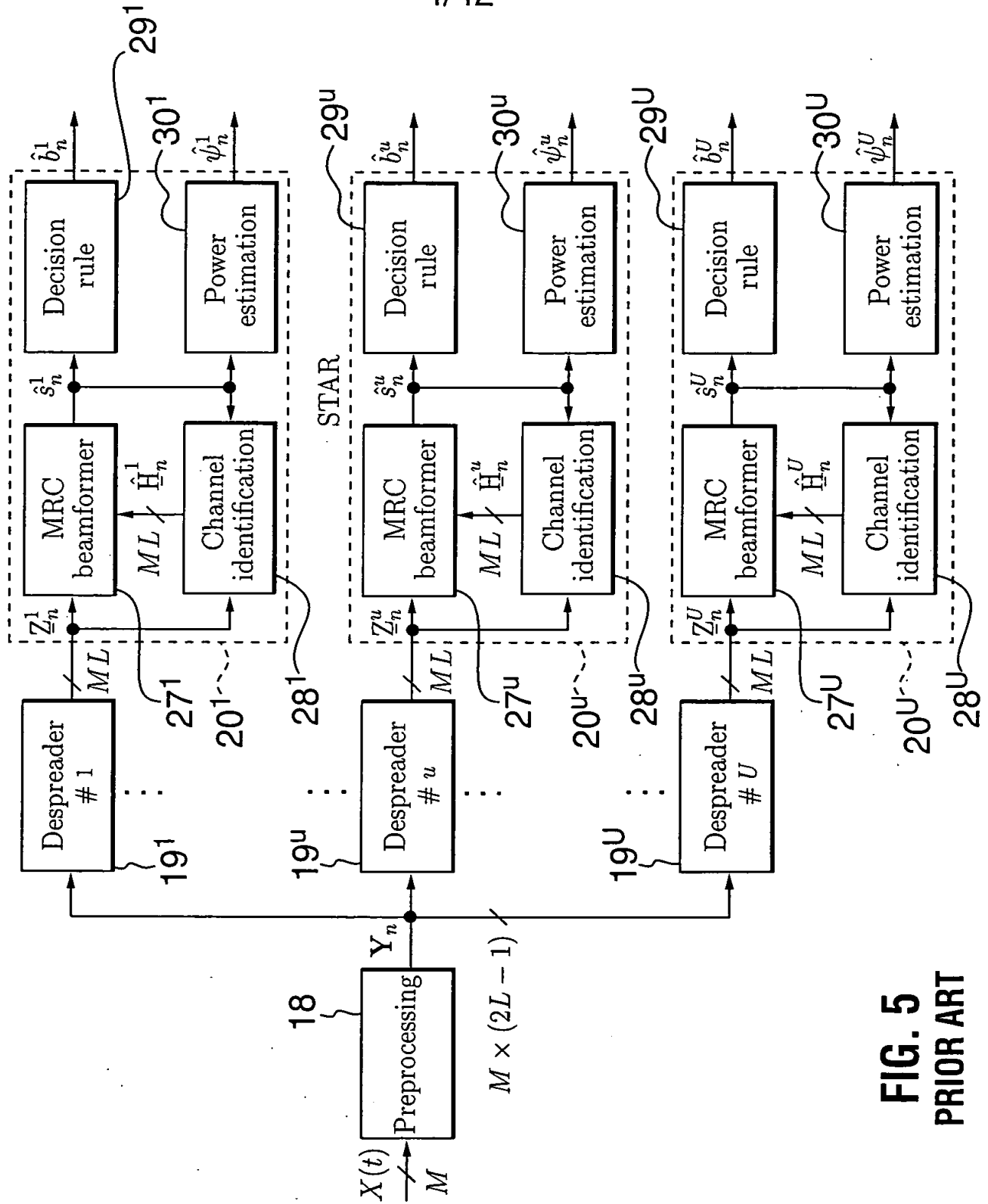
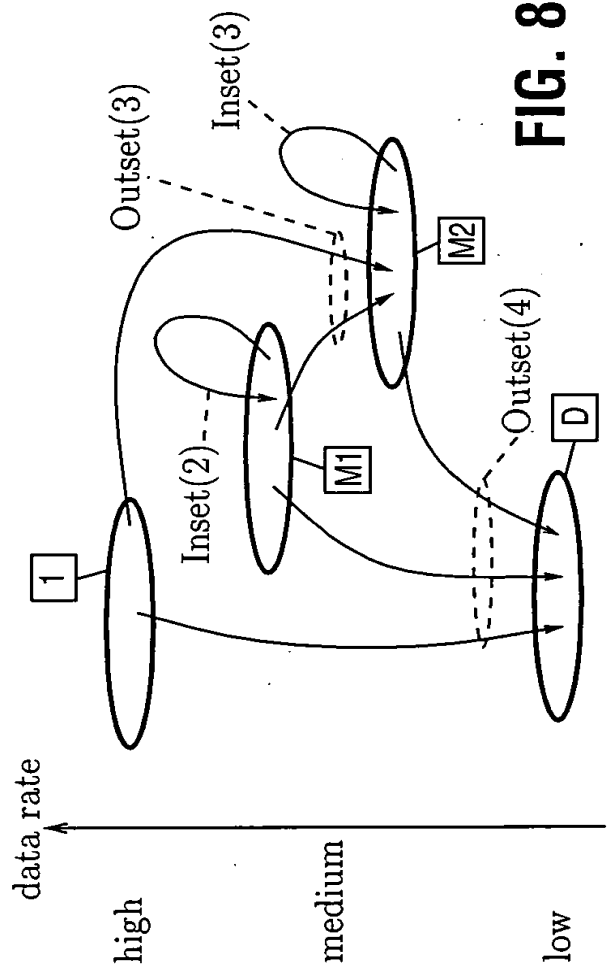
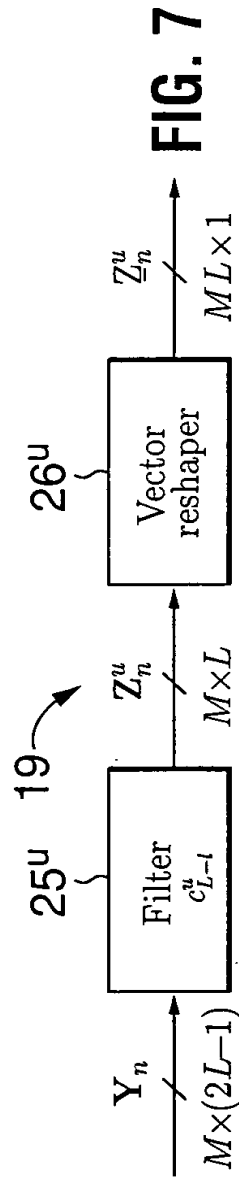
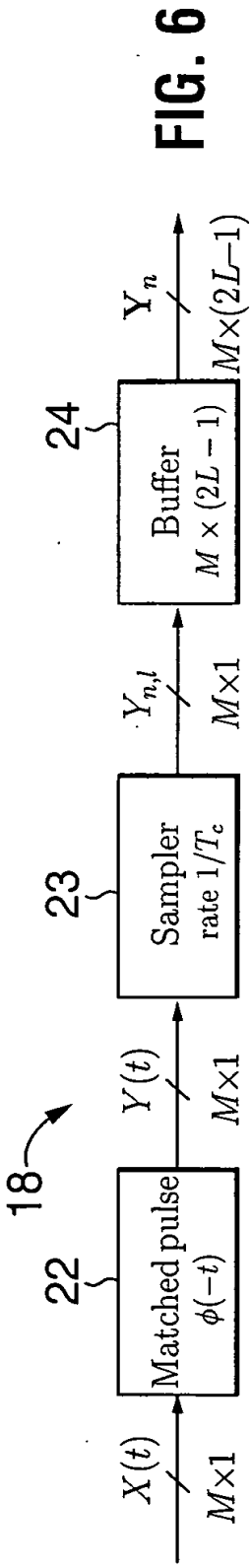


FIG. 4(b)



**FIG. 5**  
PRIOR ART



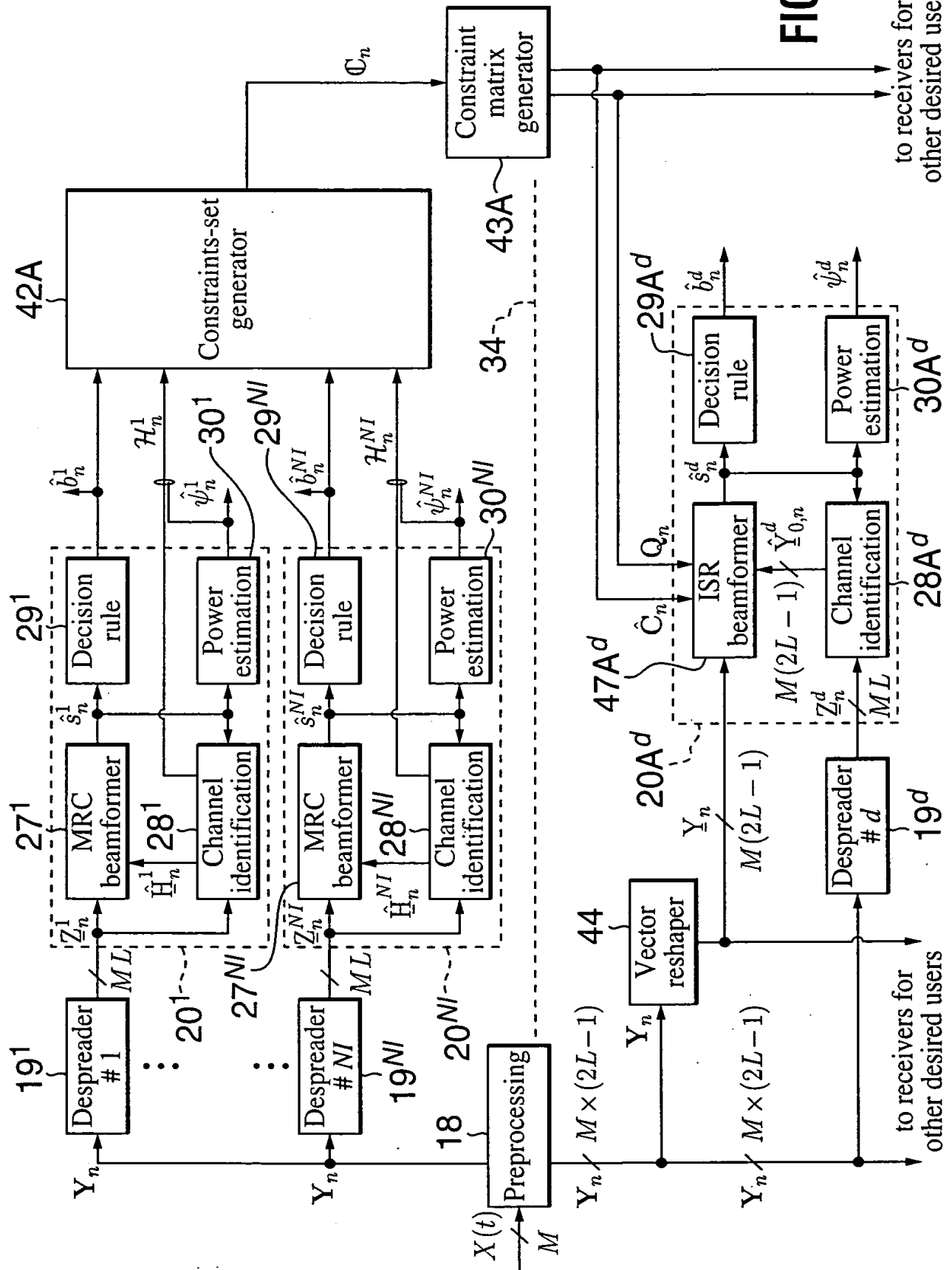


FIG. 9

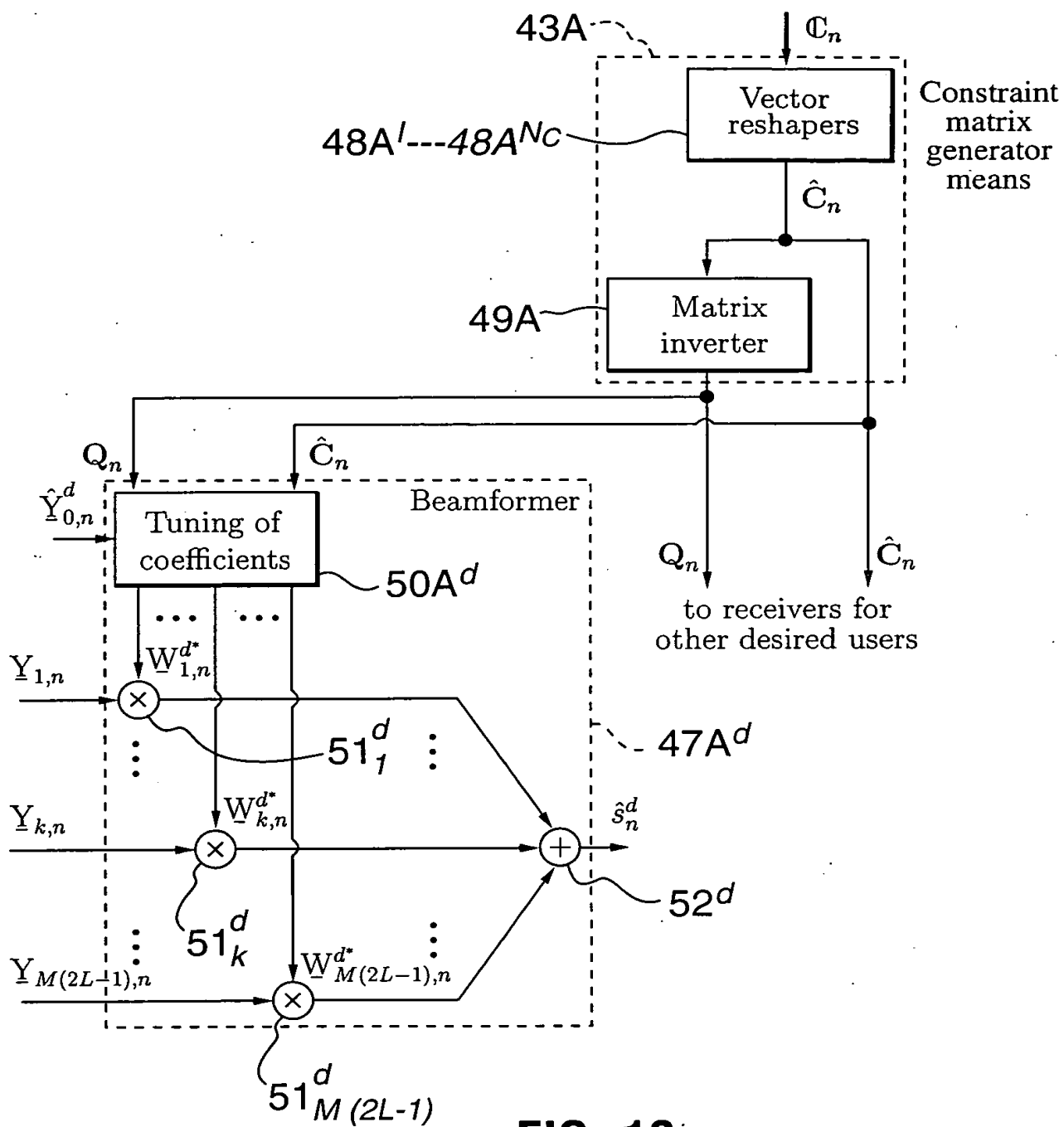
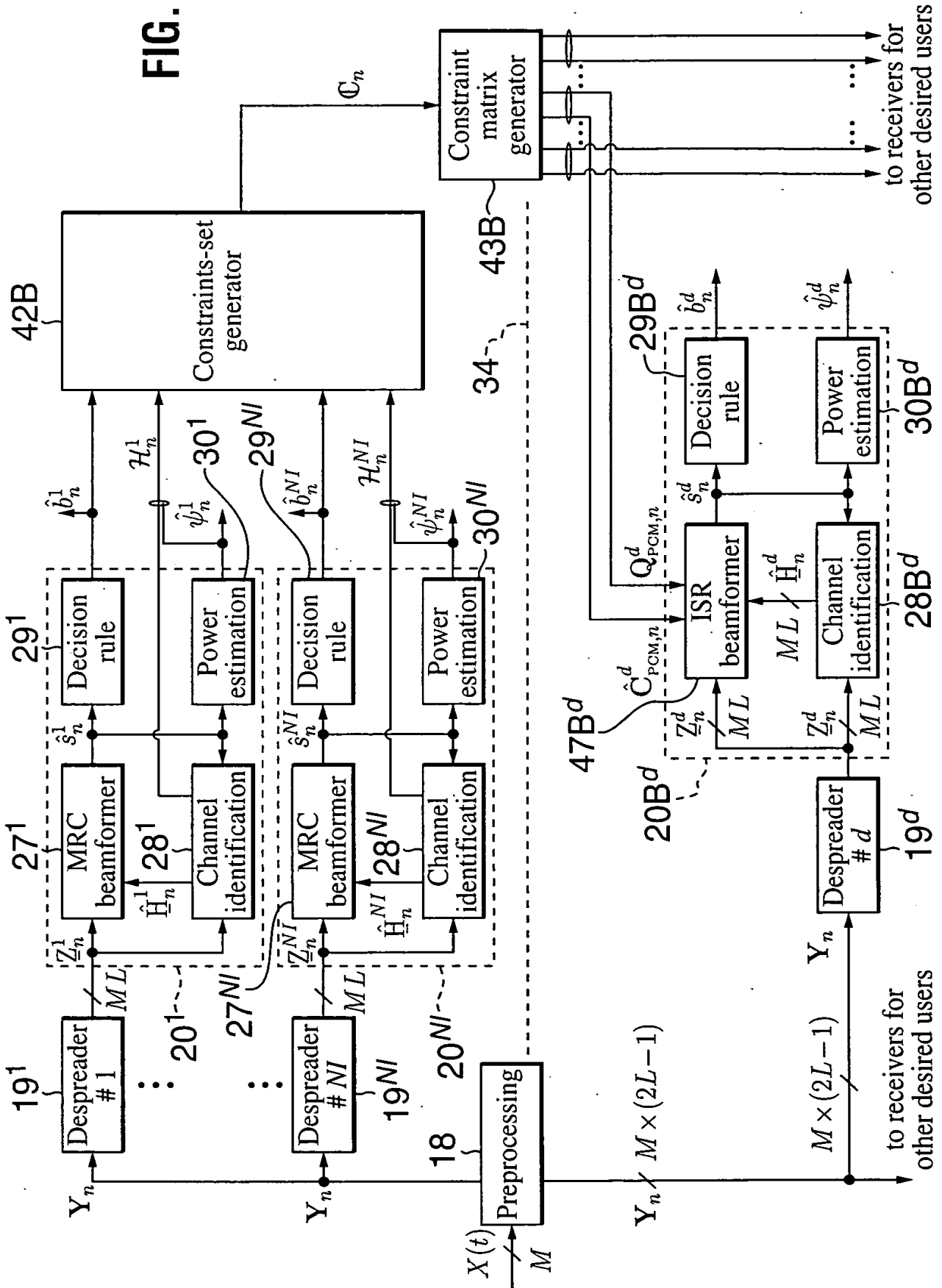


FIG. 10

FIG. 11





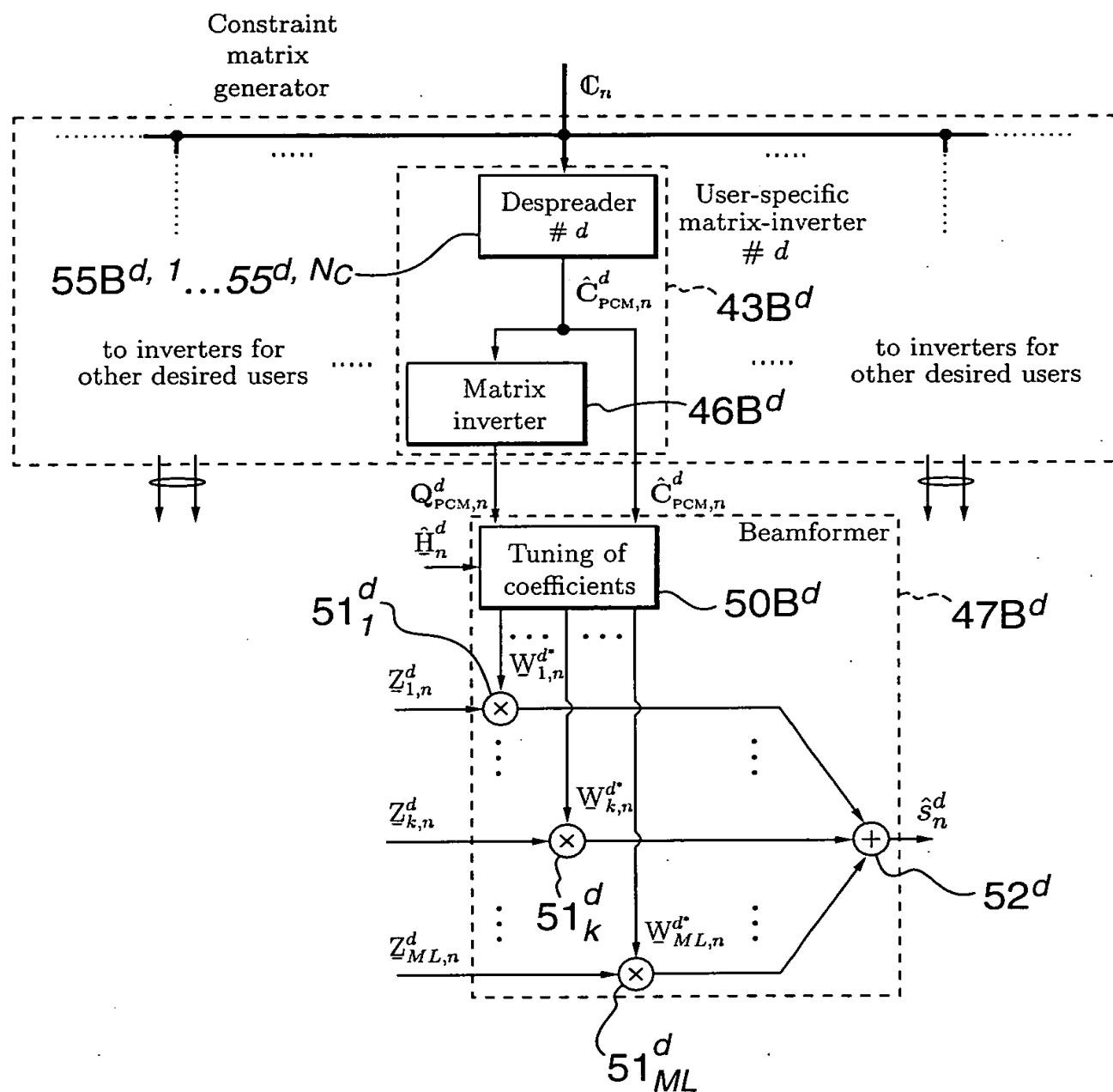
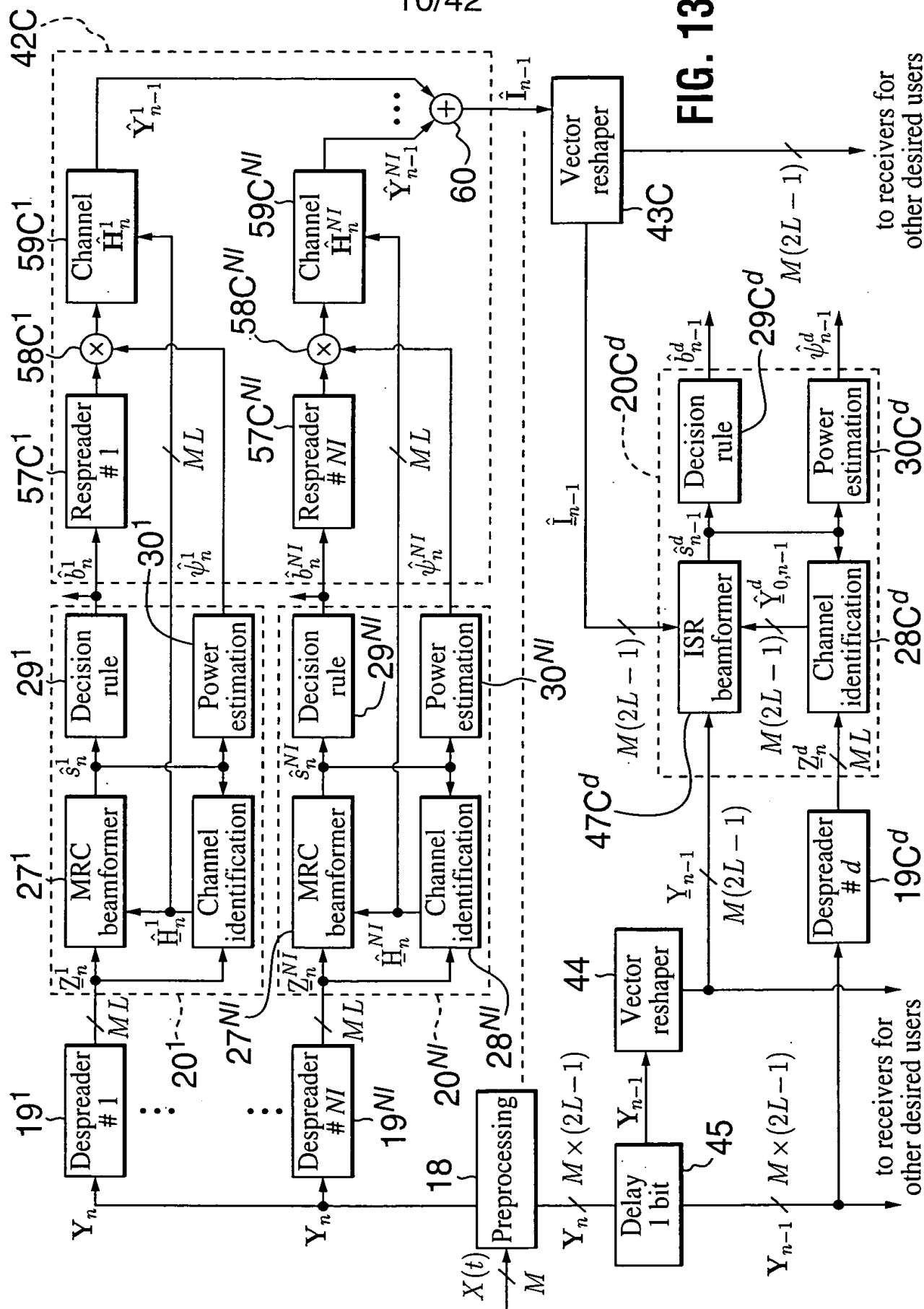


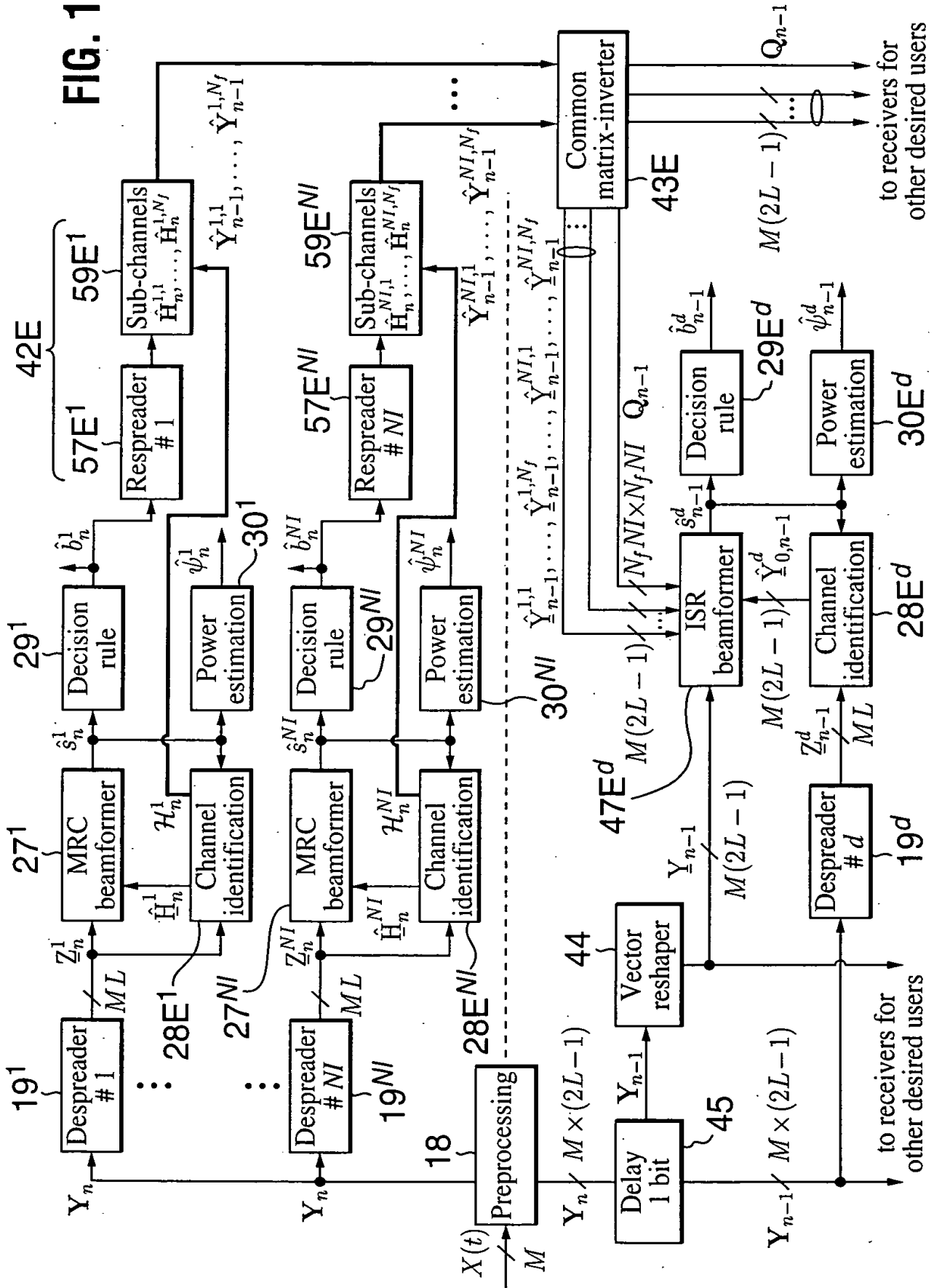
FIG. 12





**FIG. 15**

FIG. 16



[illegible]

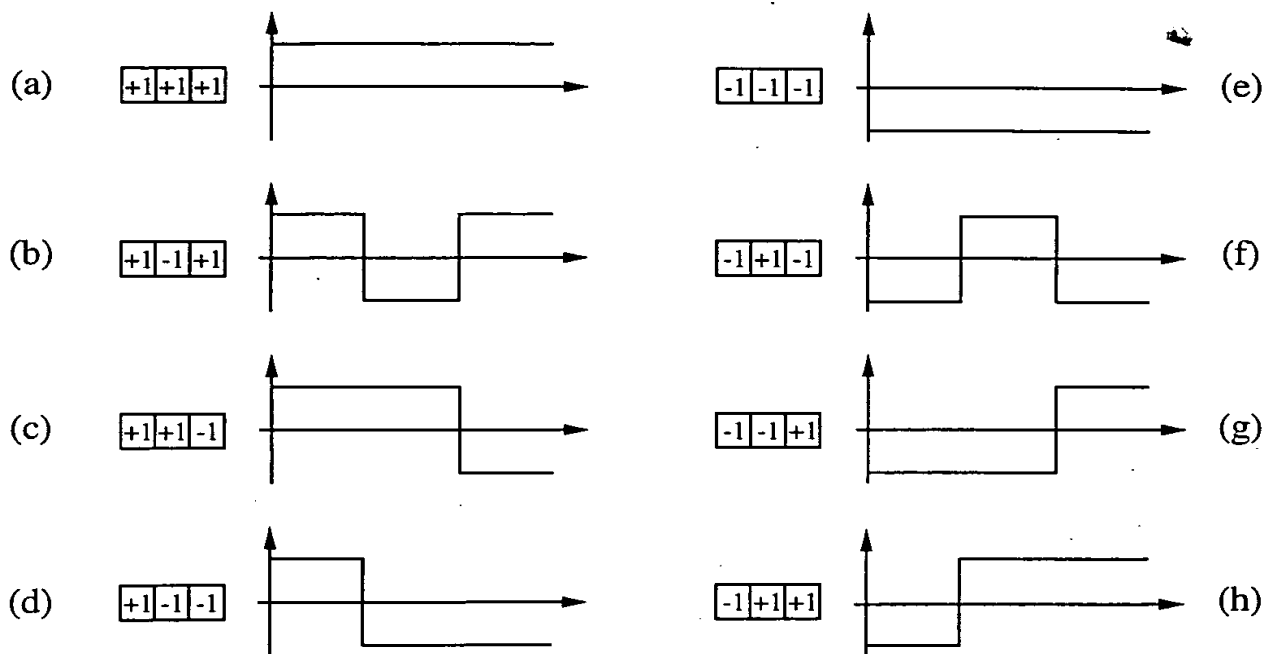


FIG. 18

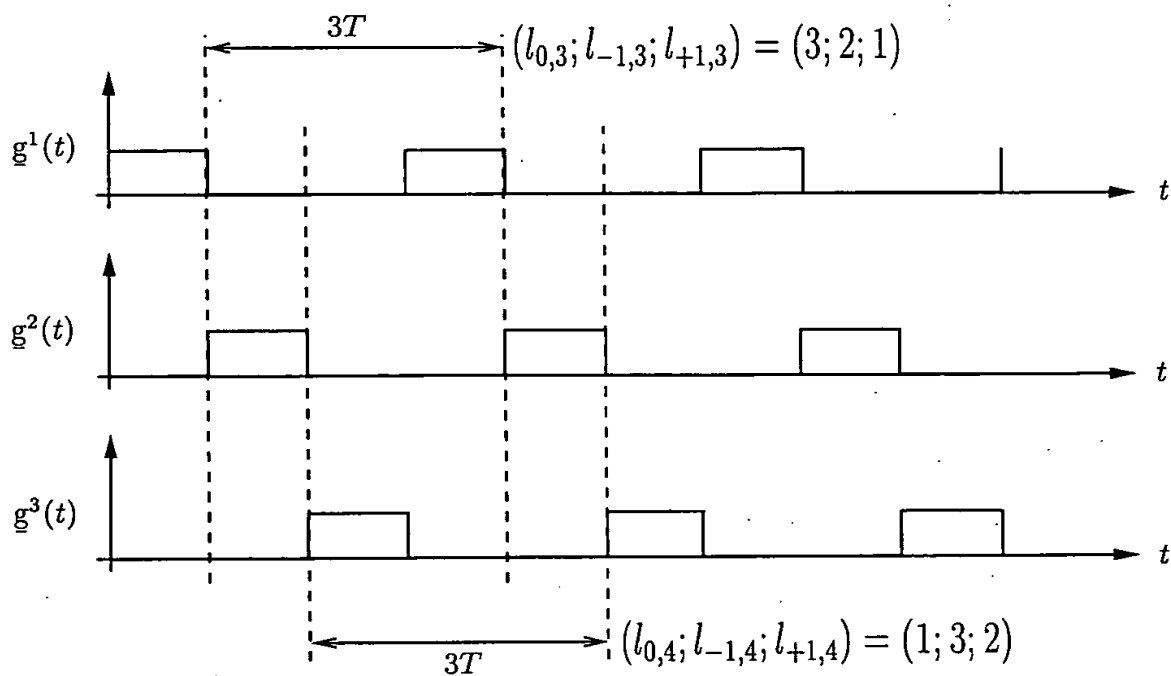


FIG. 19

FIG. 20

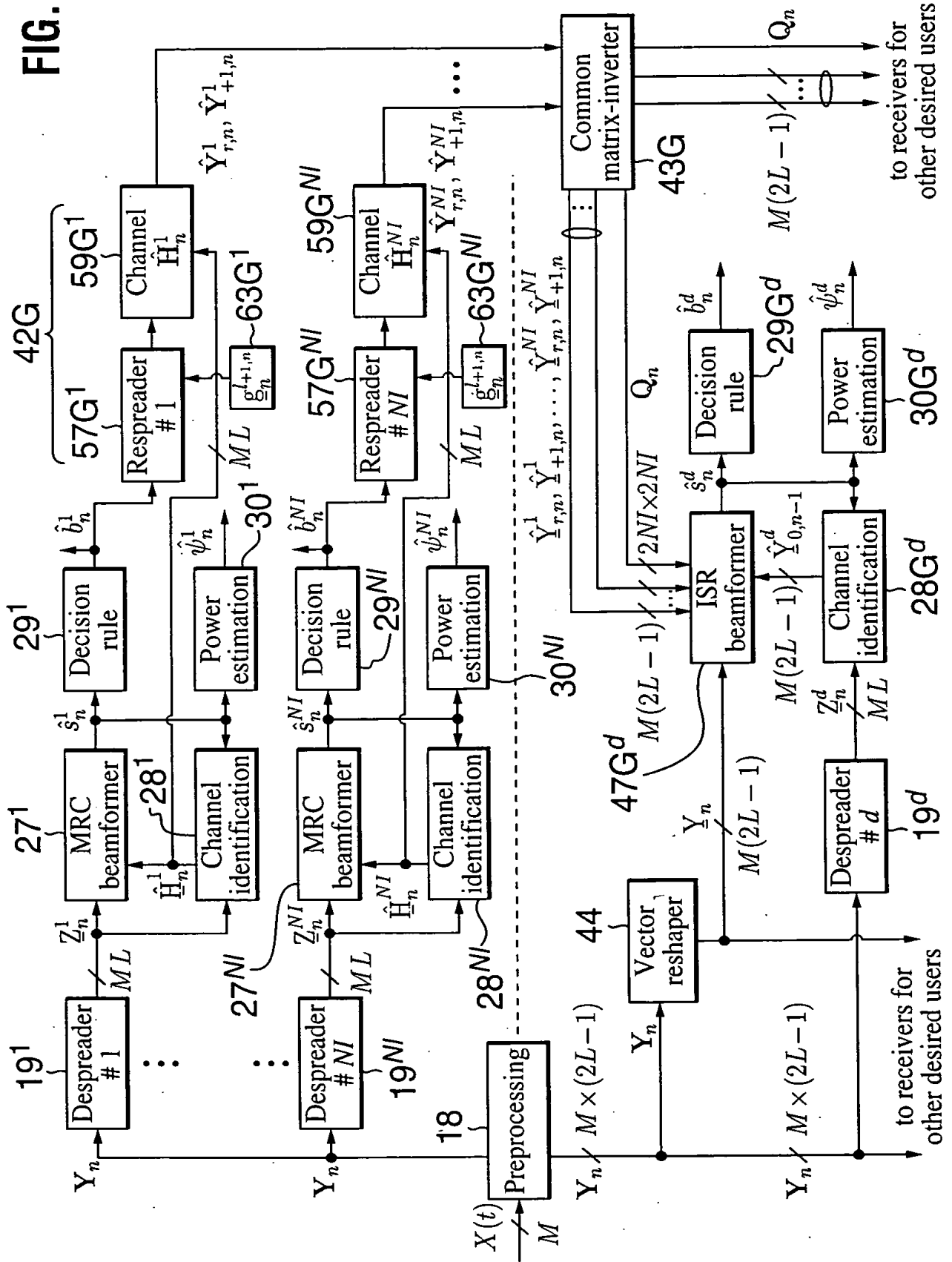


FIG. 21

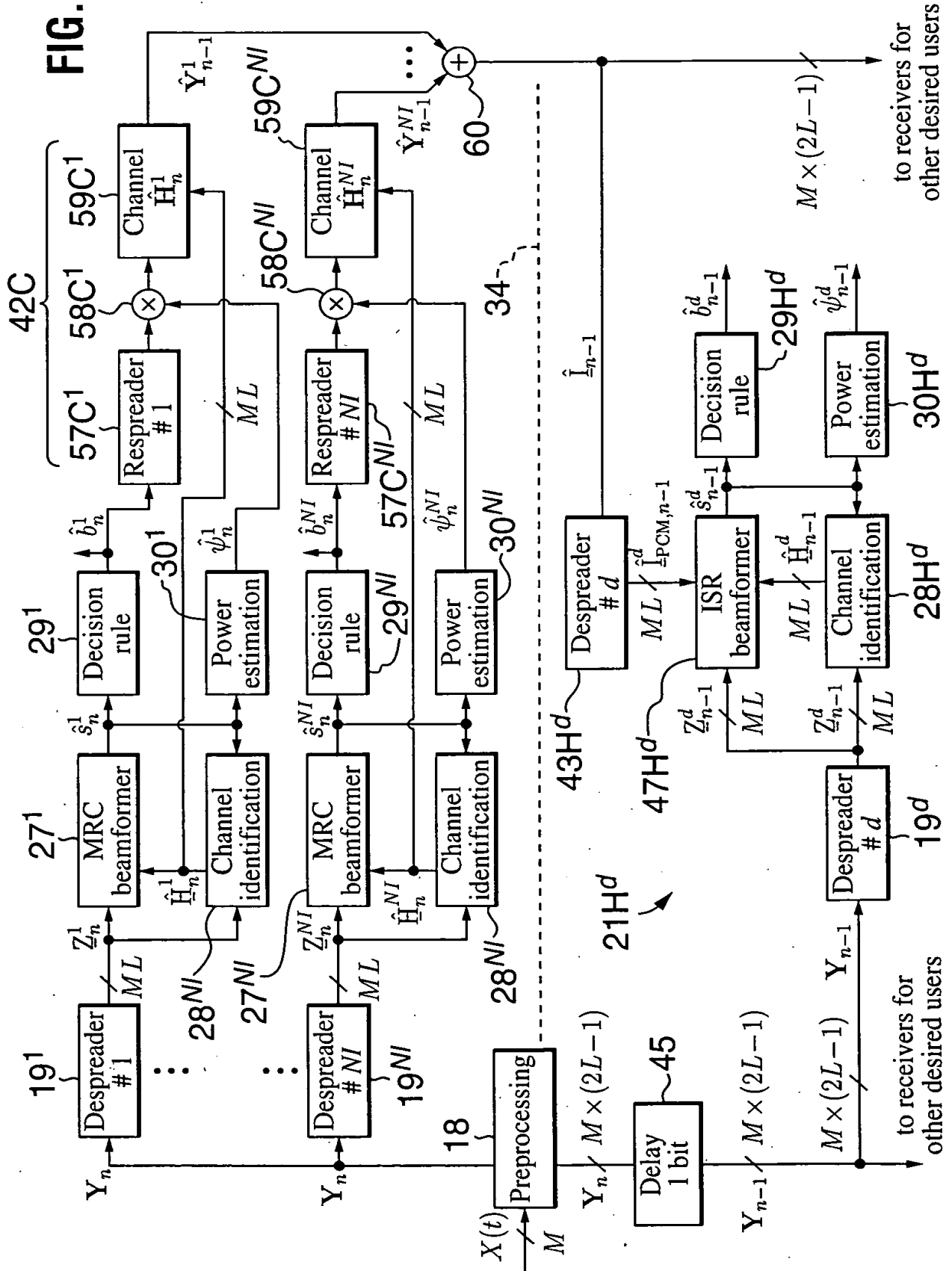
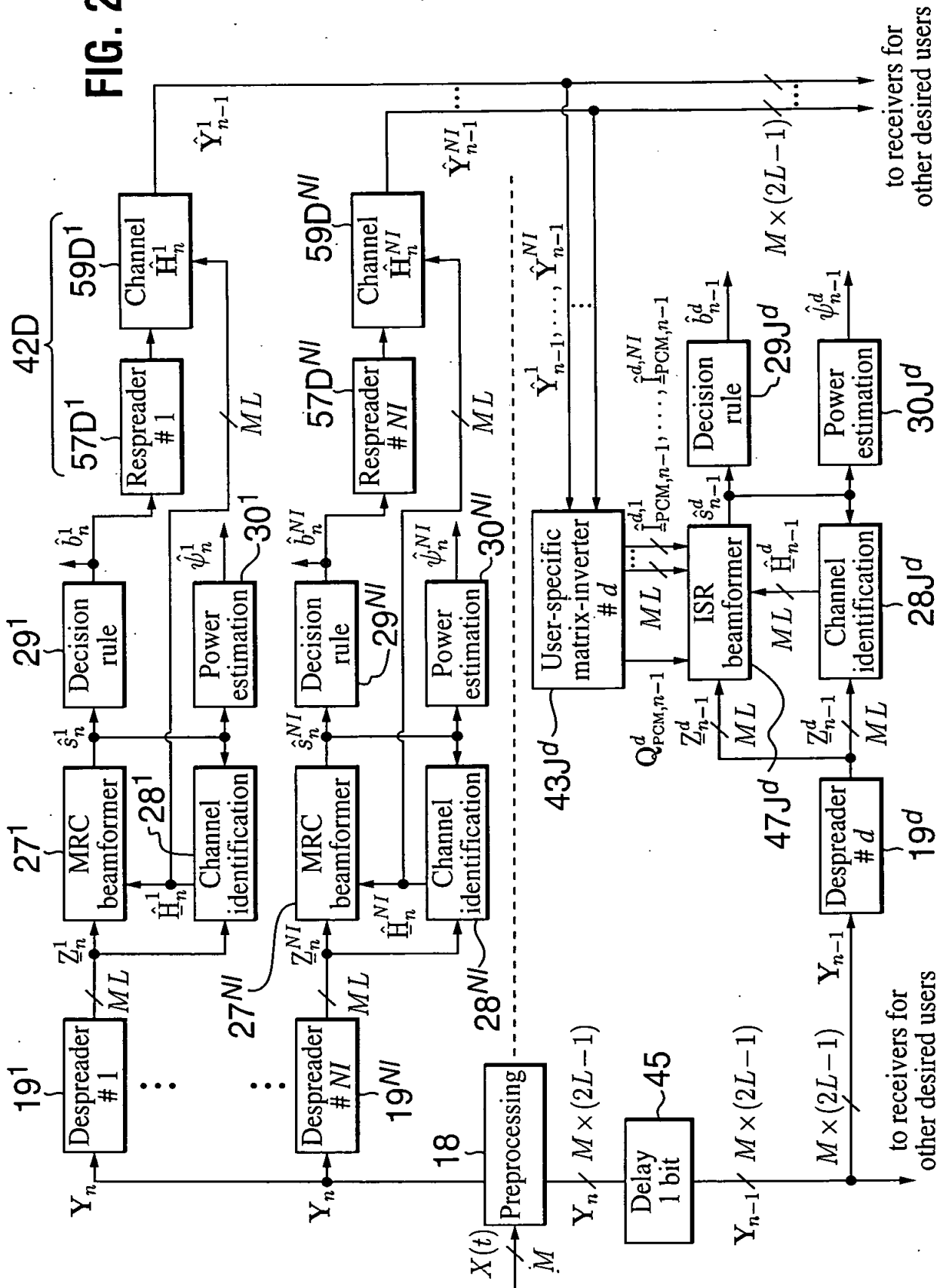


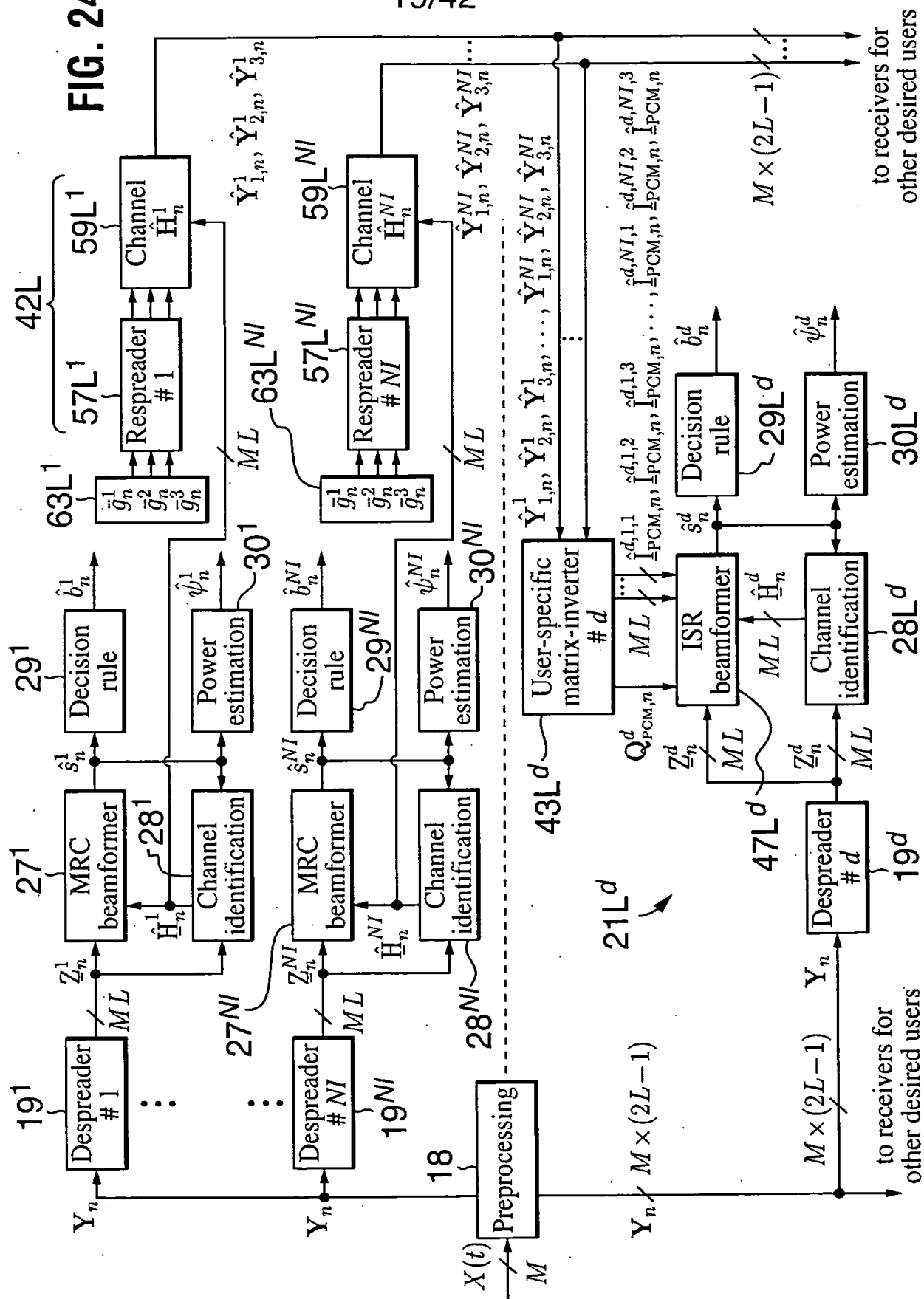


FIG. 22



[illegible]

FIG. 24



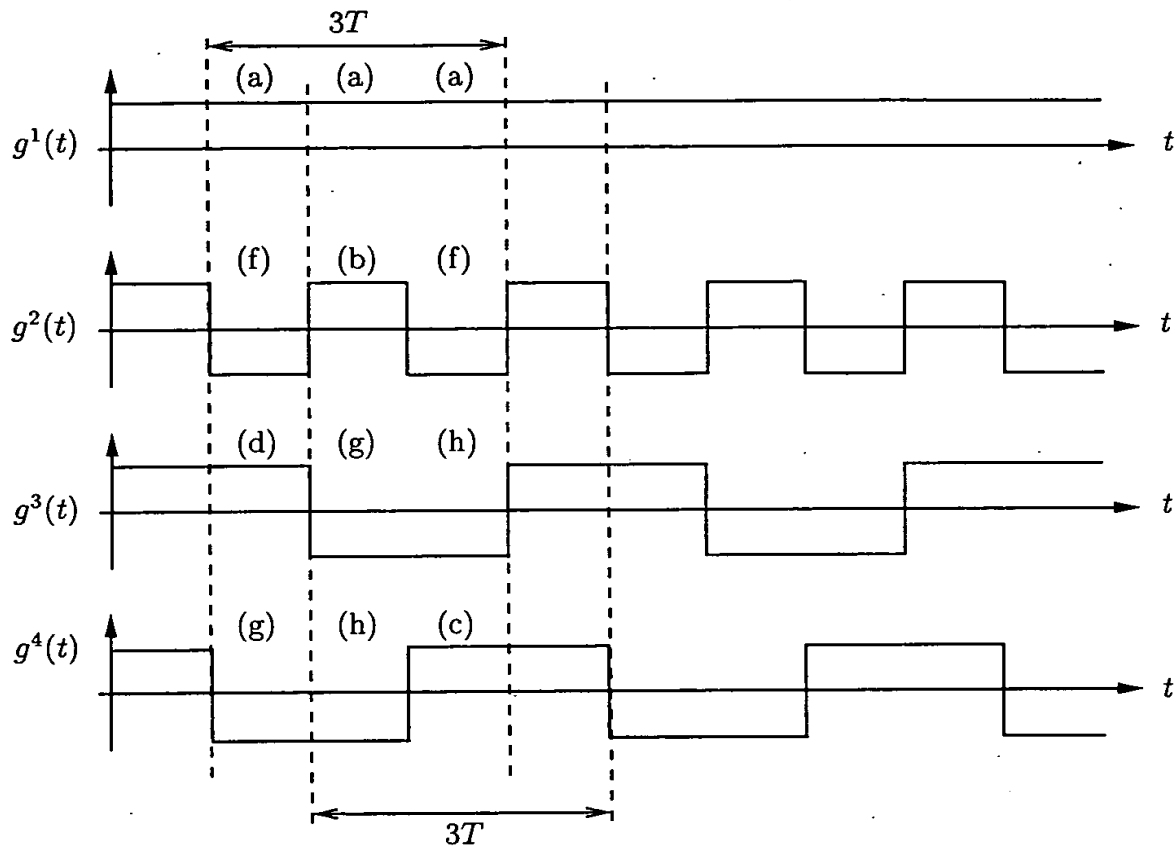
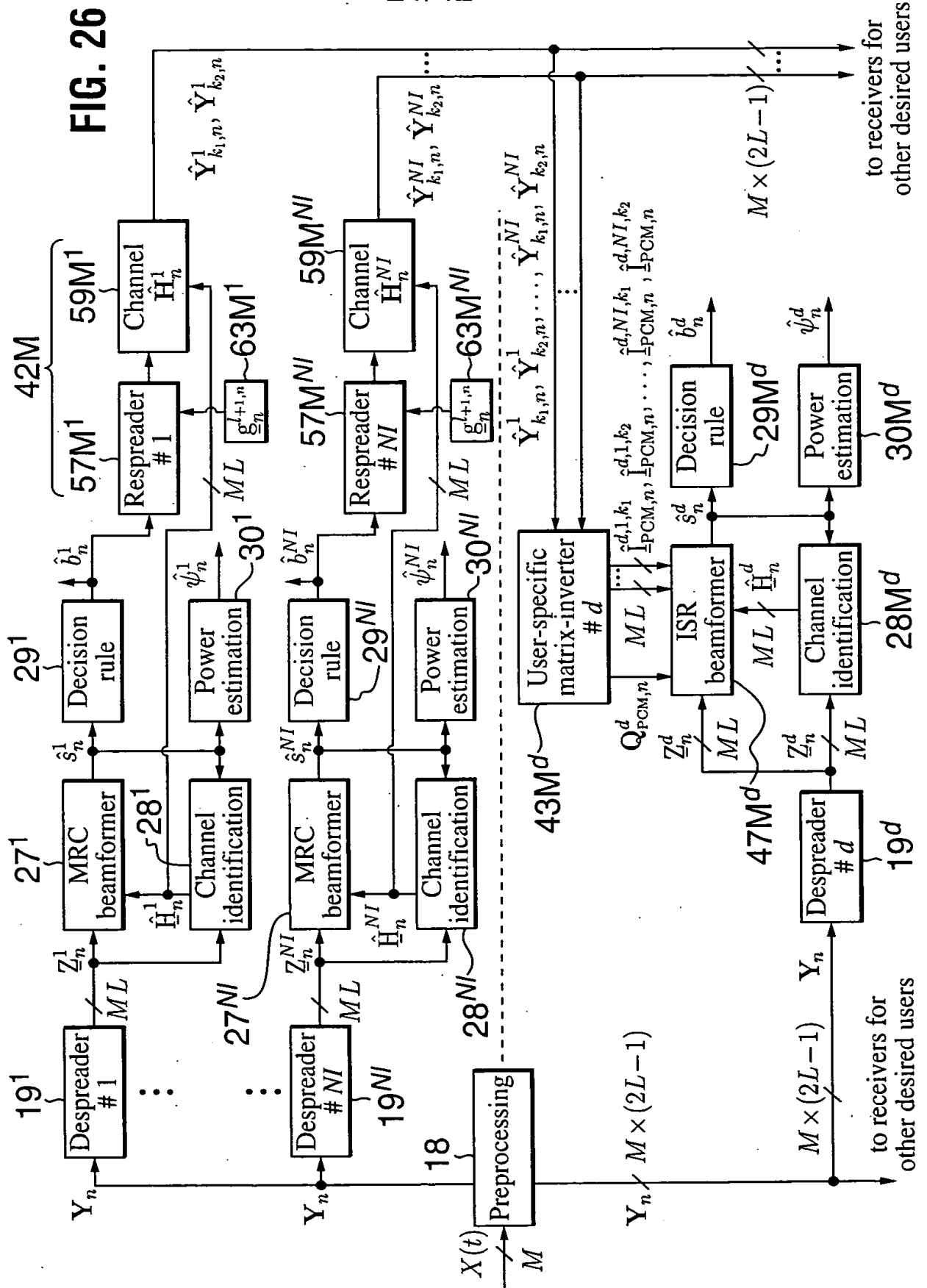
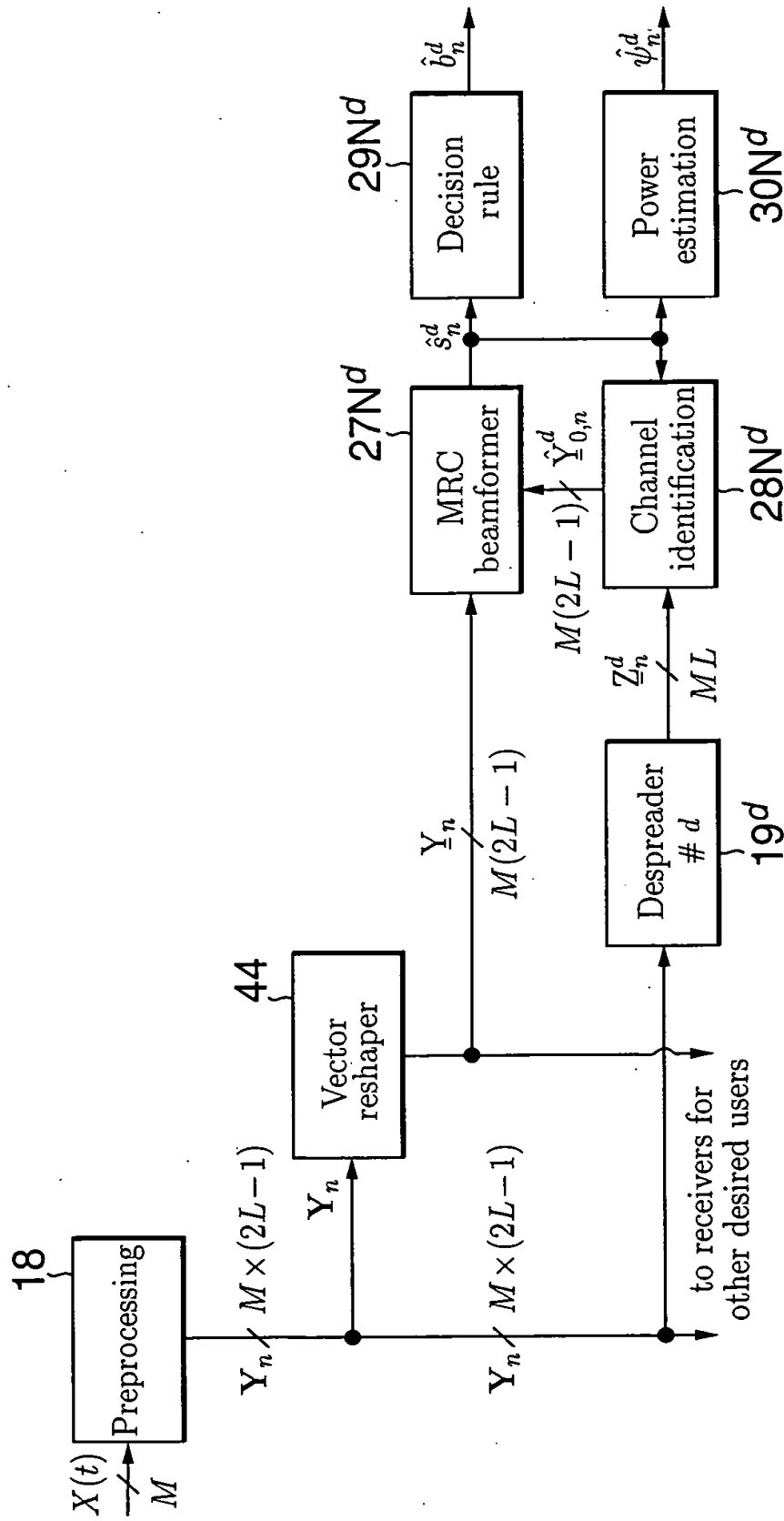


FIG. 25

FIG. 26





**FIG. 27**

**FIG. 28**

The diagram illustrates a joint ISR processing system for multiple users. The input  $X(t)$  is split into  $M$  parallel streams. Each stream  $i$  passes through a Preprocessing block (18), a Delay block (45) with a 1-bit delay, and two Vector reshaper blocks (44/2 and 44/1). The output of the first Vector reshaper (44/2) is  $Y_{n-1}$ , and the output of the second (44/1) is  $Y_n$ . These are then processed by a Despreaders block (19<sup>i</sup>) to produce  $Q_{n-1}$  and  $Q_n$ . The  $Q_n$  signal is then processed by a Channel identification block (28P<sup>i</sup>) to produce  $\hat{Y}_{0,n-1}^i$ . This signal is then processed by an MRC beamformer (27P<sup>i</sup>) to produce  $\hat{Y}_{0,n-1}^i$ . The  $\hat{Y}_{0,n-1}^i$  signal is then processed by an ISR beamformer (47P<sup>i</sup>) to produce  $\hat{C}_{n-1}$  and  $\hat{S}_{n-1}^i$ . The  $\hat{C}_{n-1}$  signal is then processed by a Decision rule (29P/1<sup>i</sup>) to produce  $\hat{b}_{n-1}^i$ . The  $\hat{S}_{n-1}^i$  signal is then processed by a Decision rule (29P/2<sup>i</sup>) to produce  $\hat{b}_{MRC,n}^i$ . The  $\hat{b}_{MRC,n}^i$  signal is then processed by a Power estimation block (30P<sup>i</sup>) to produce  $\hat{\psi}_{n-1}^i$ . The  $\hat{\psi}_{n-1}^i$  signal is then processed by a Constraints-set generator (42) to produce  $C_{n-1}$ . The  $C_{n-1}$  signal is then processed by a Constraint matrix generator (43) to produce  $\hat{C}_{n-1}$ . The  $\hat{C}_{n-1}$  signal is then processed by a Vector reshaper (44/2) to produce  $Y_{n-1}$ . The  $Y_{n-1}$  signal is then processed by a Vector reshaper (44/1) to produce  $Y_n$ . The  $Y_n$  signal is then processed by a Preprocessing block (18) to produce  $X(t)$ .

to other users for joint ISR processing

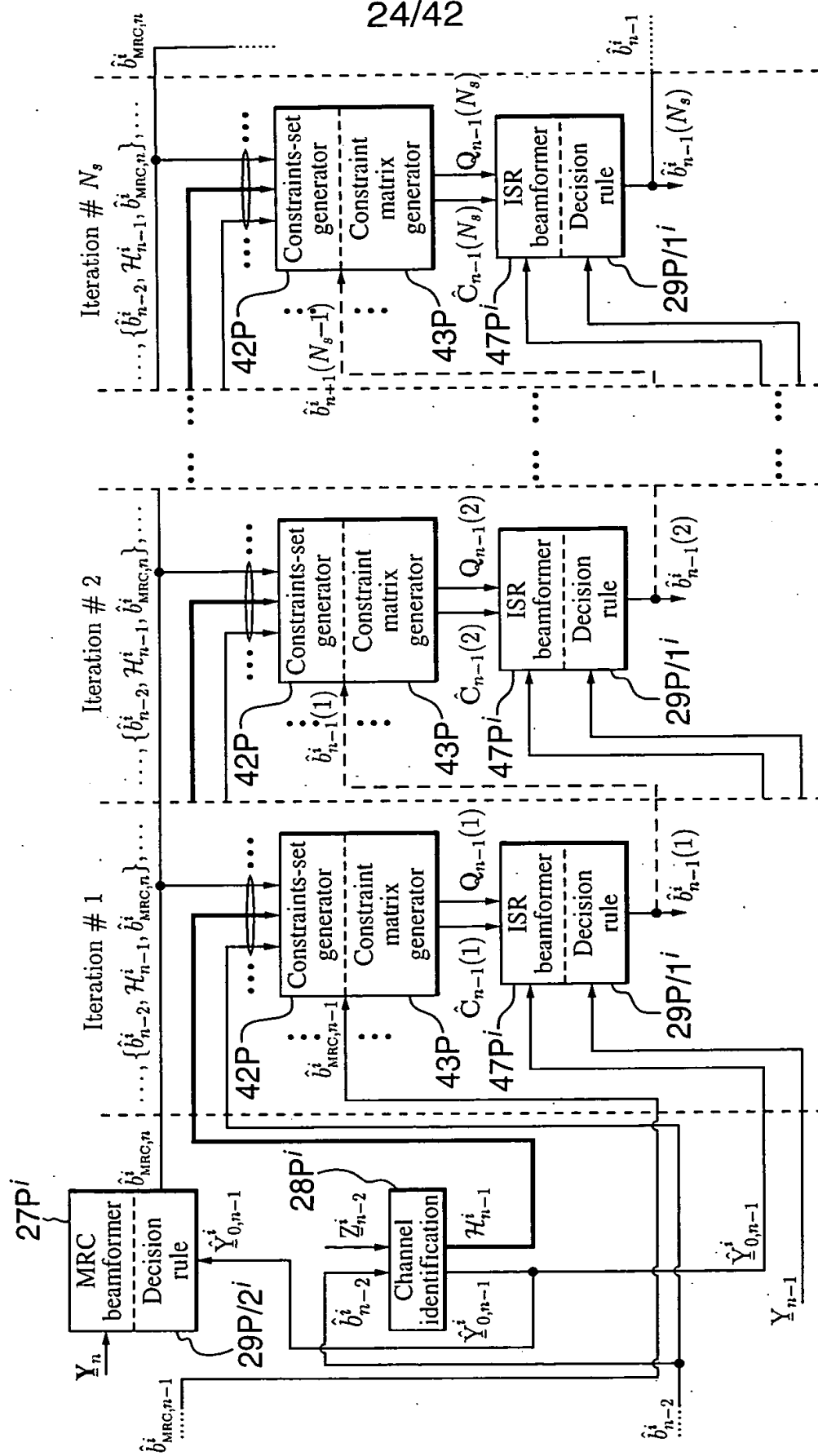
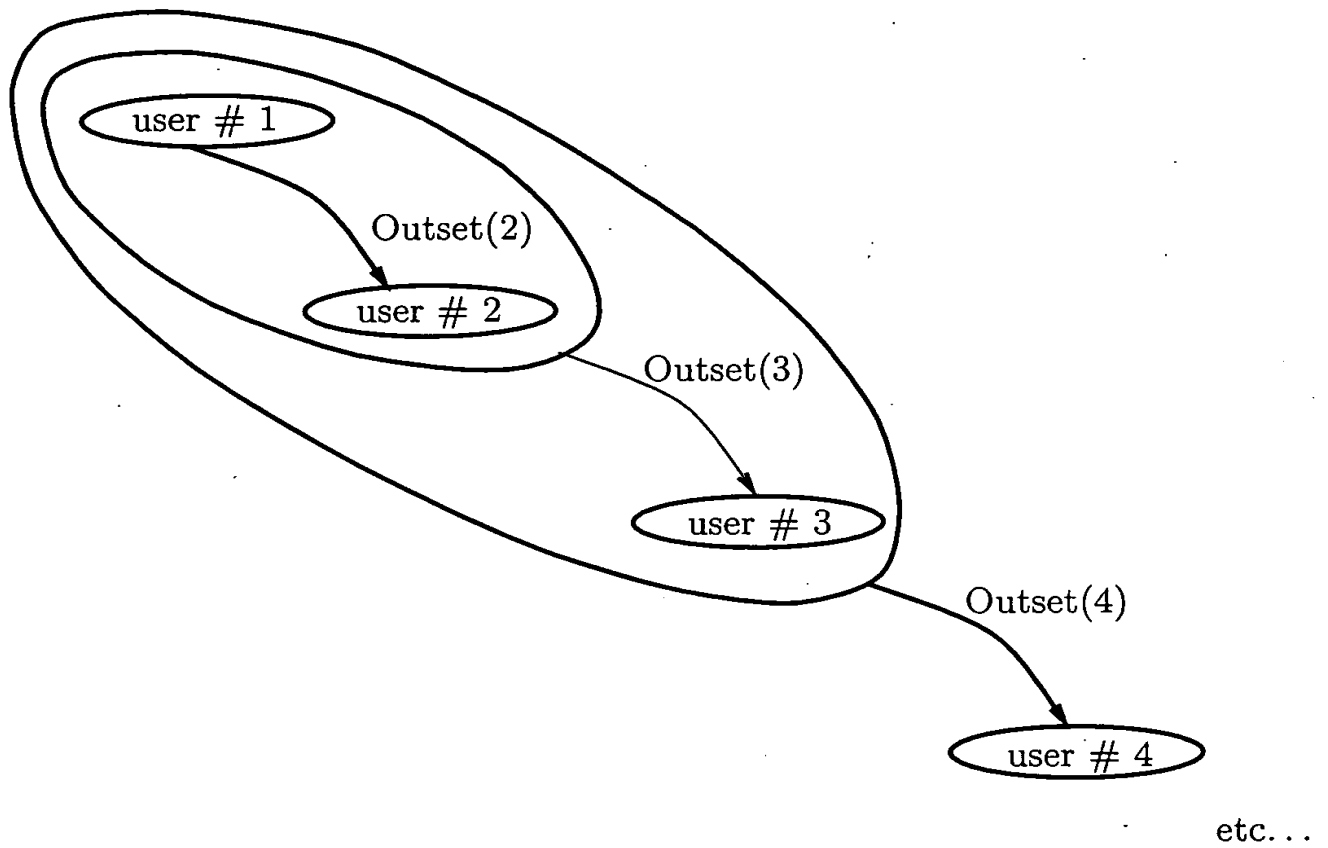
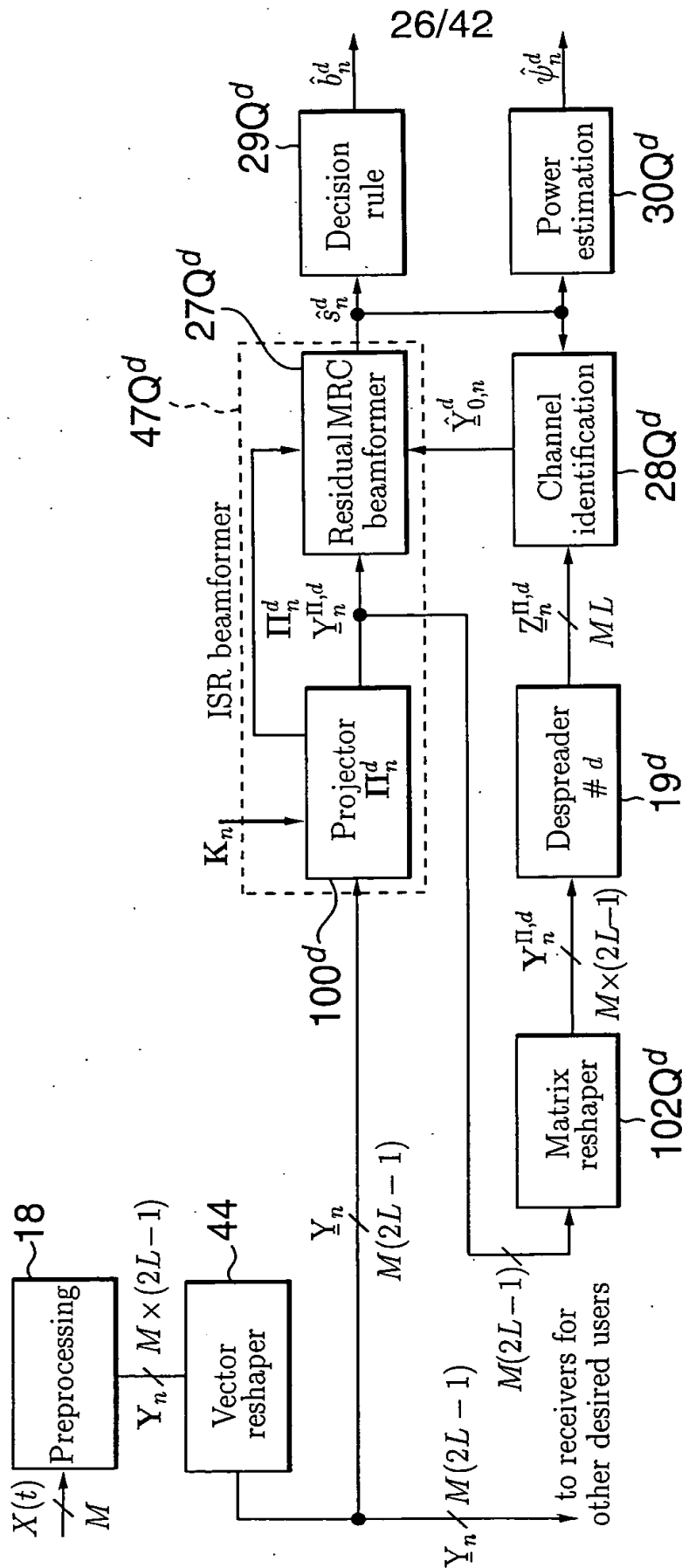


FIG. 29



**FIG. 30**



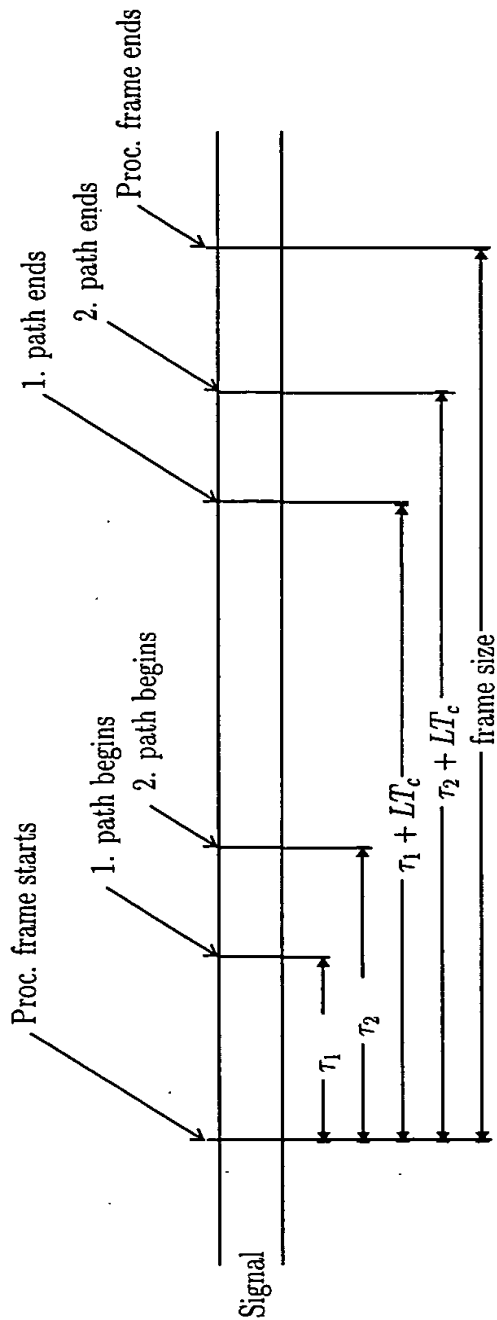


FIG. 32

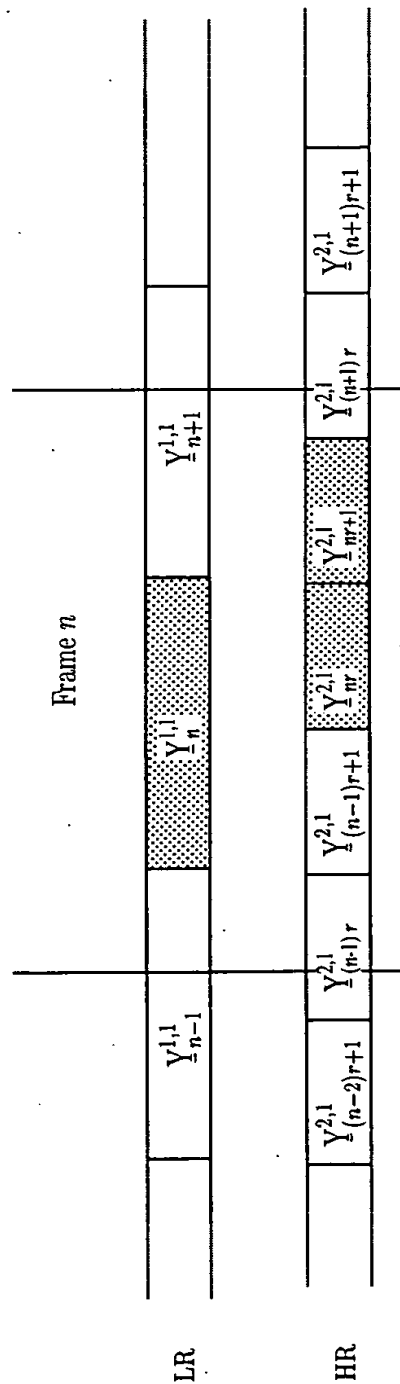


FIG. 33



**FIG. 34**

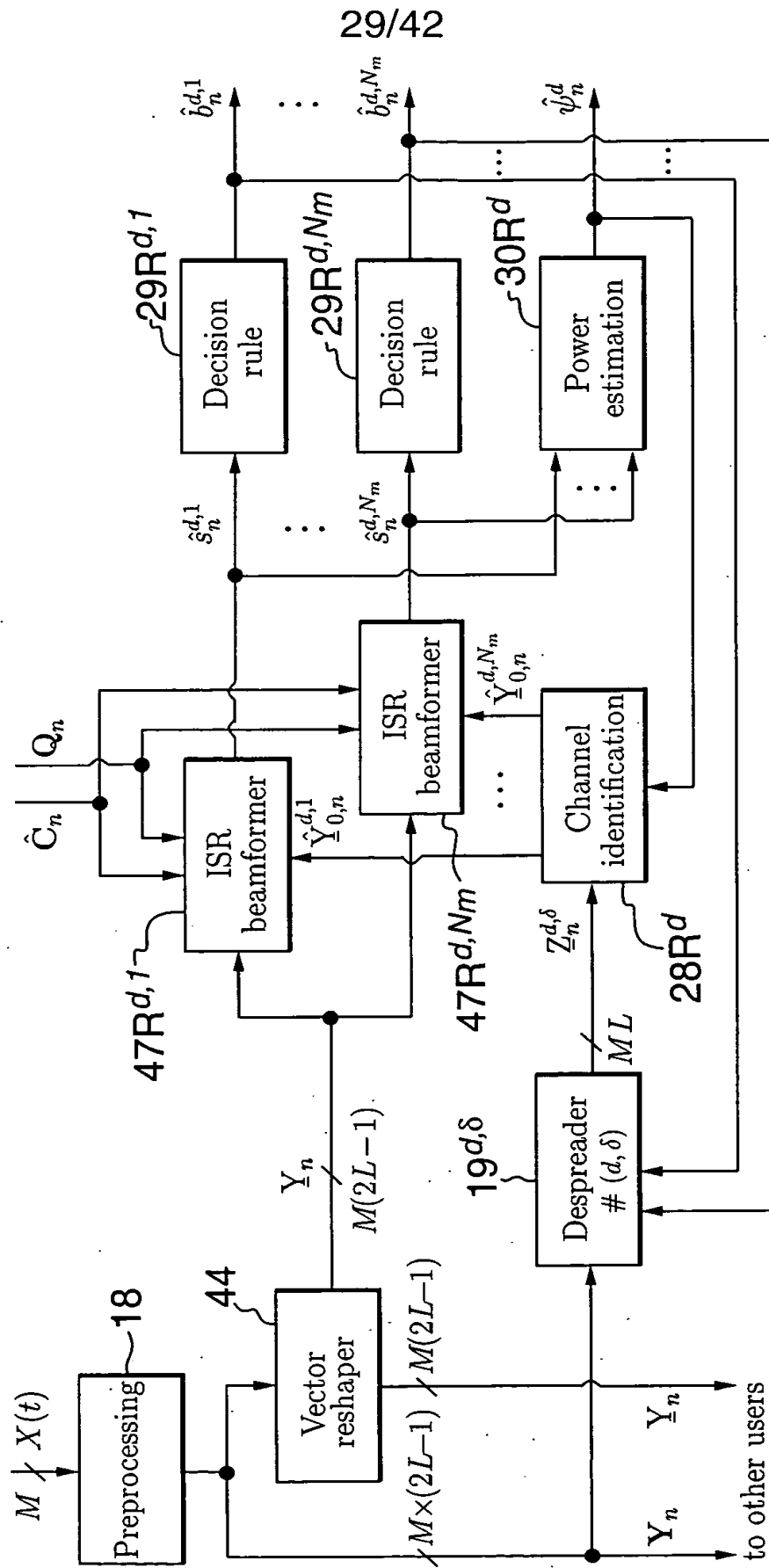


FIG. 35

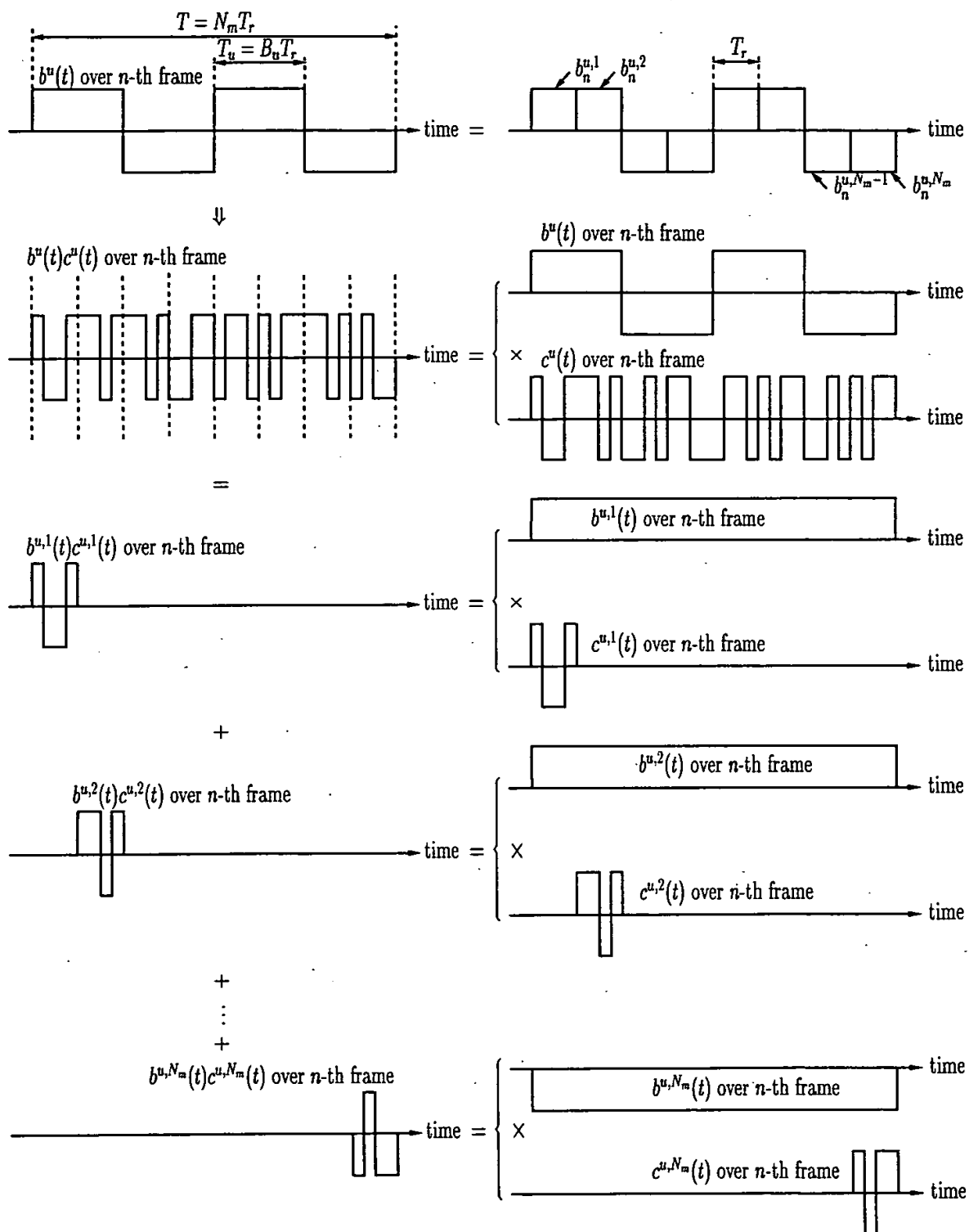


FIG. 36

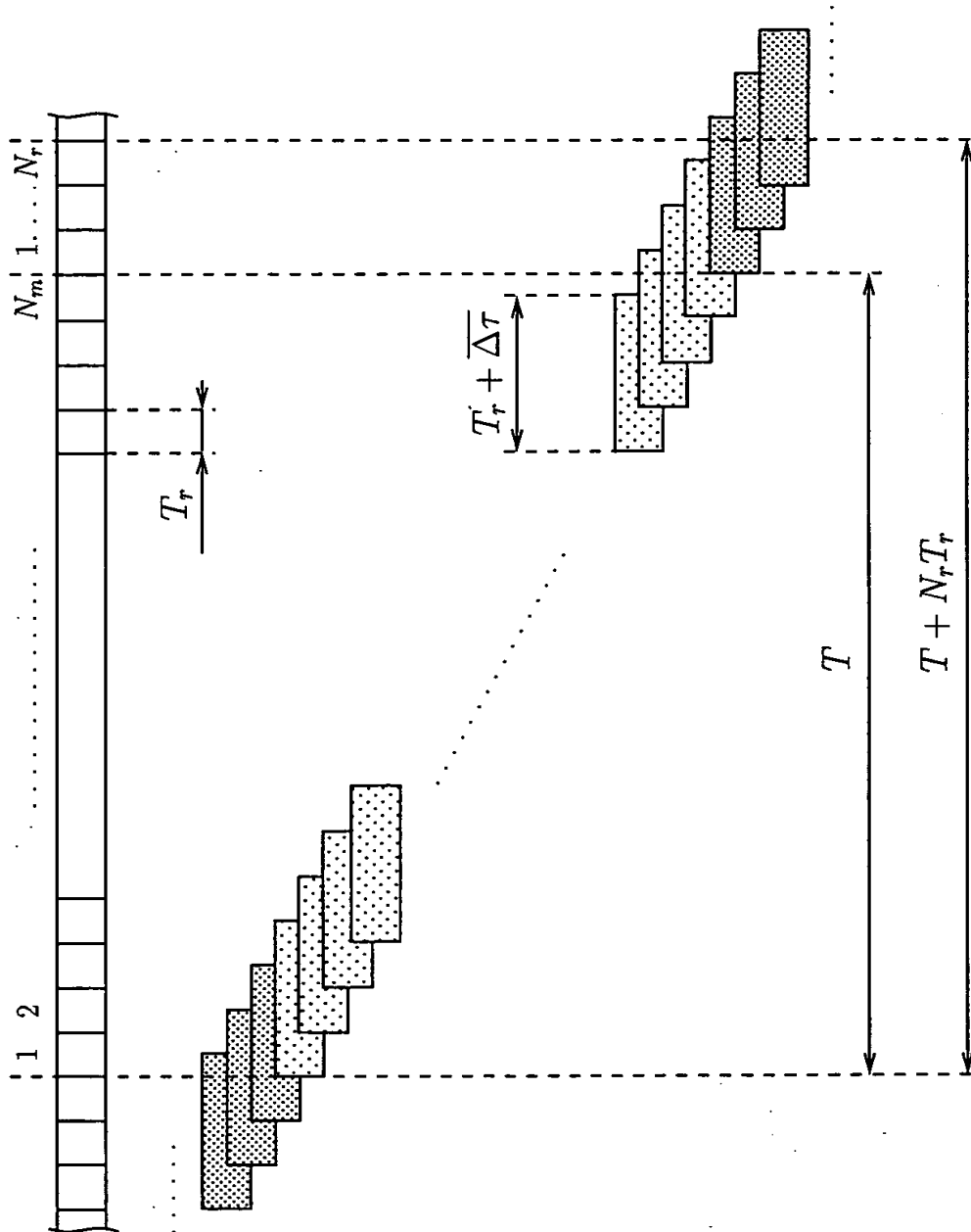


FIG. 37

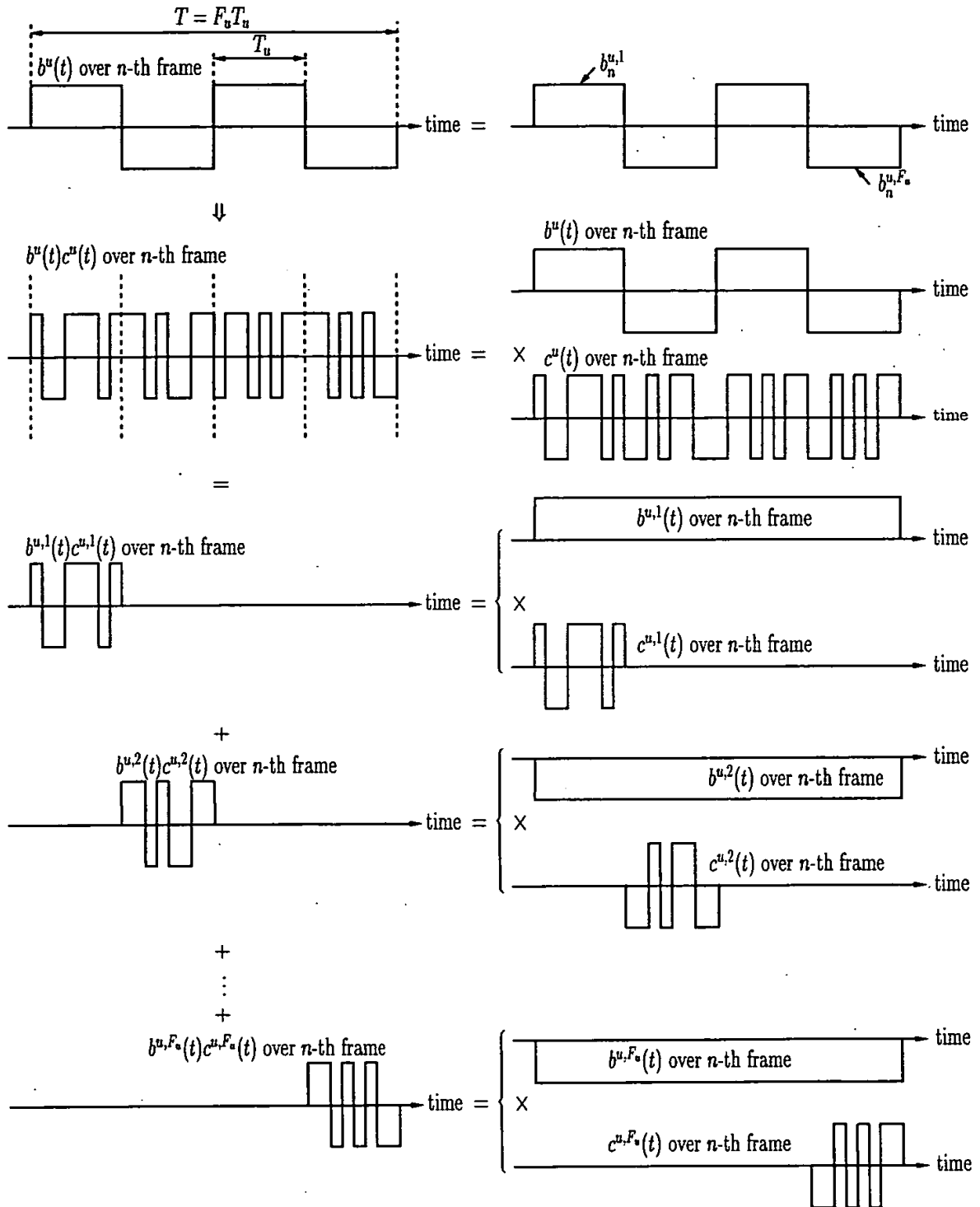


FIG. 38



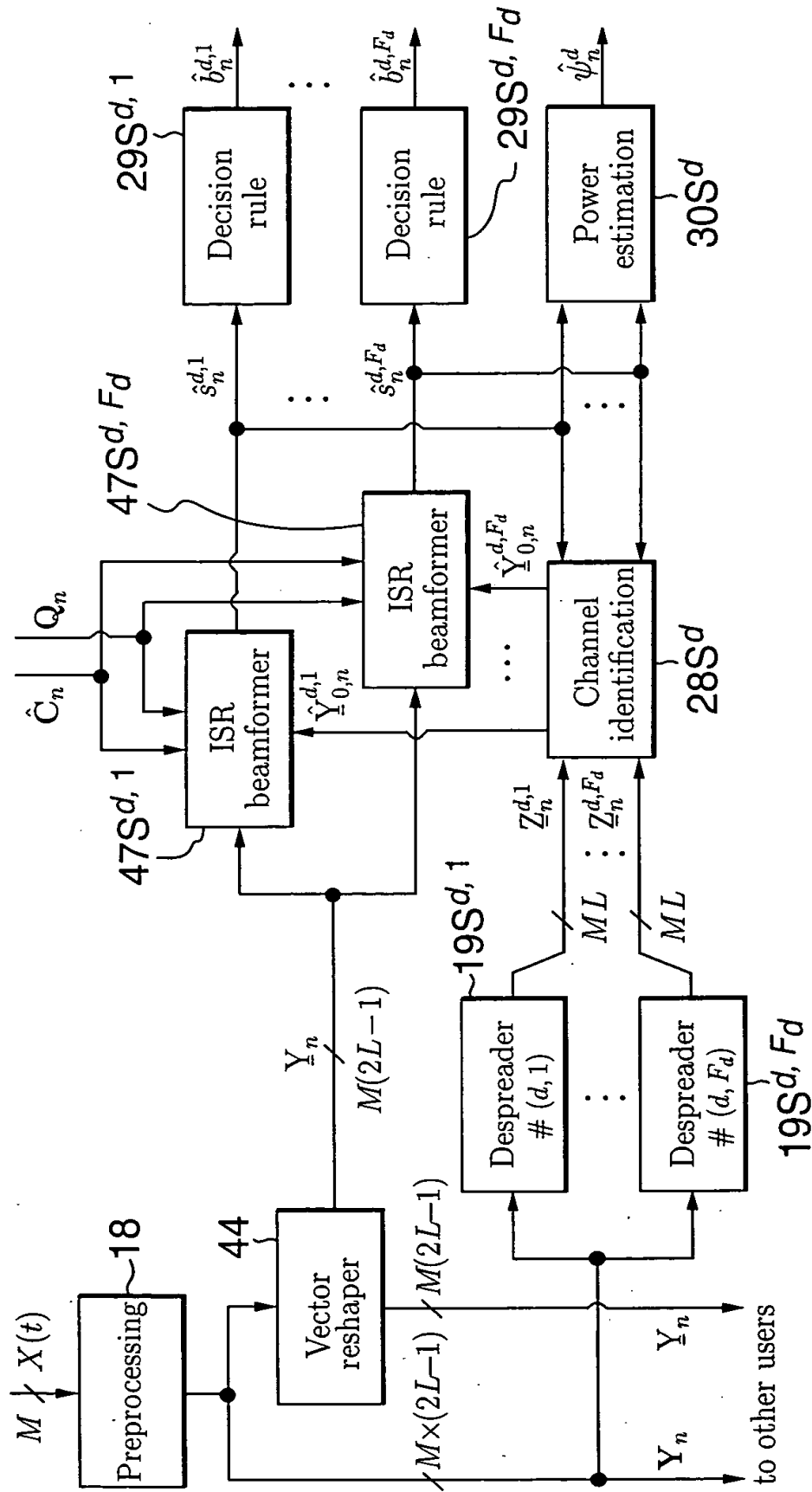
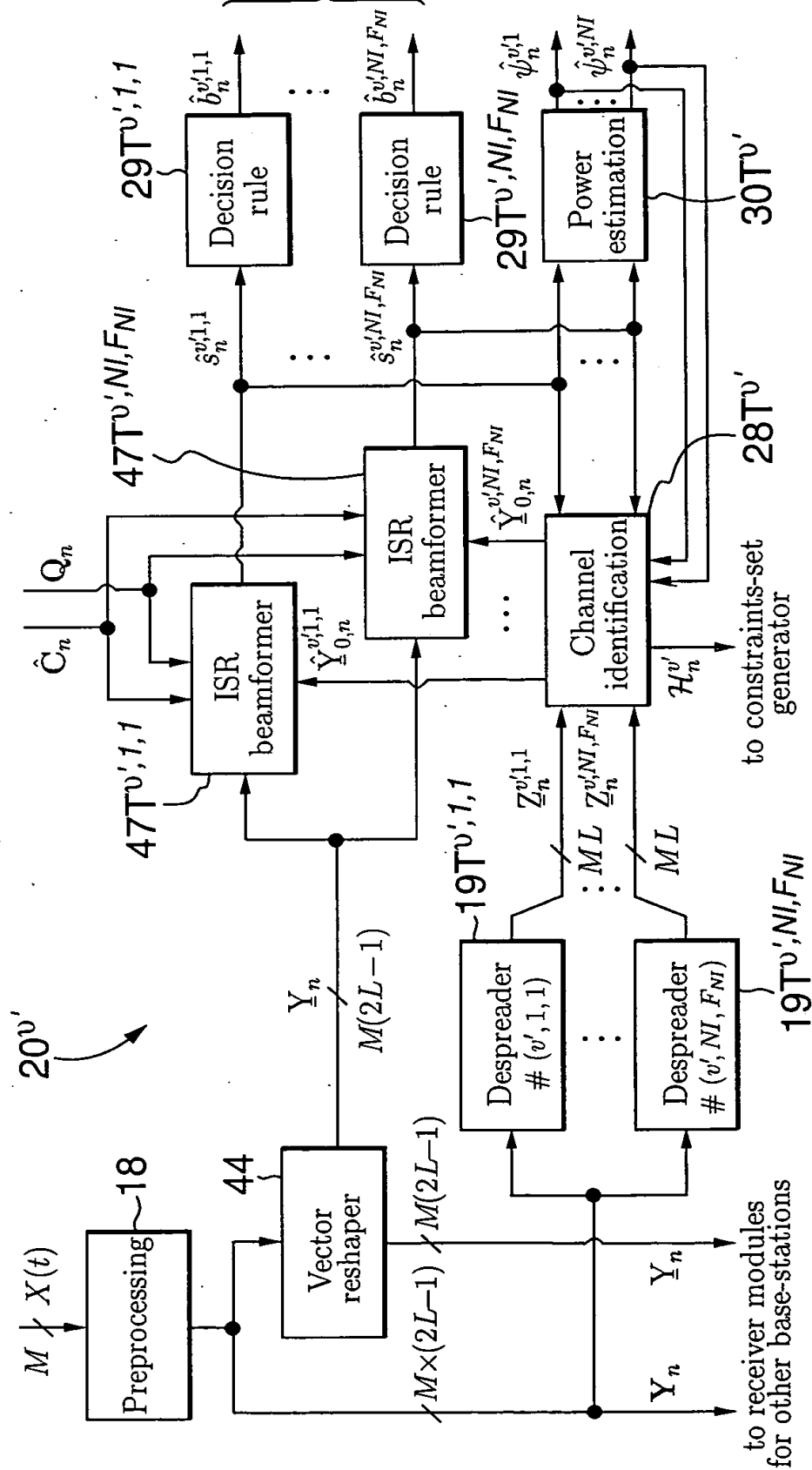


FIG. 39



**FIG. 40**





**FIG. 42**

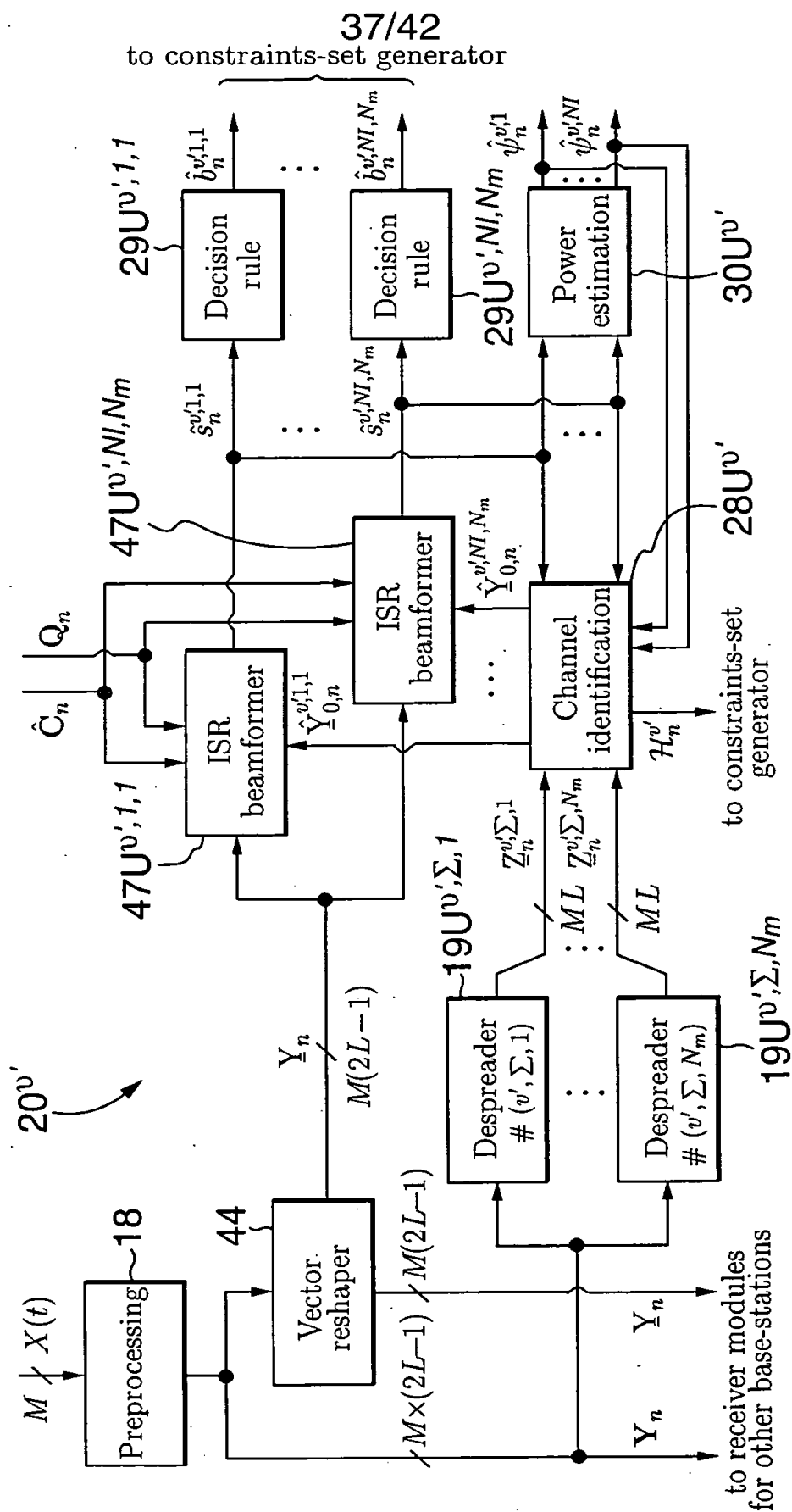
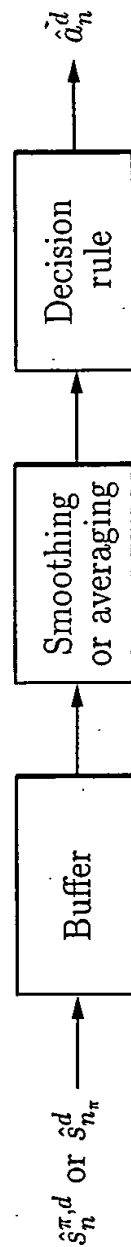
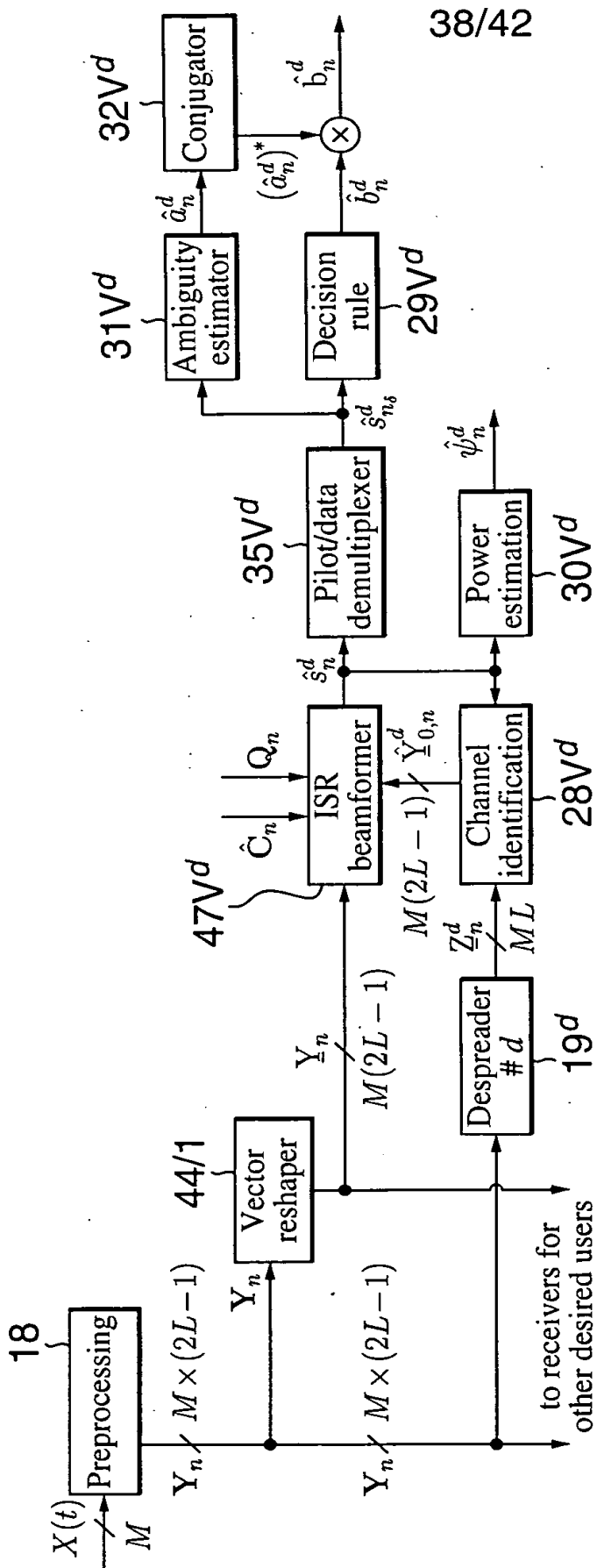
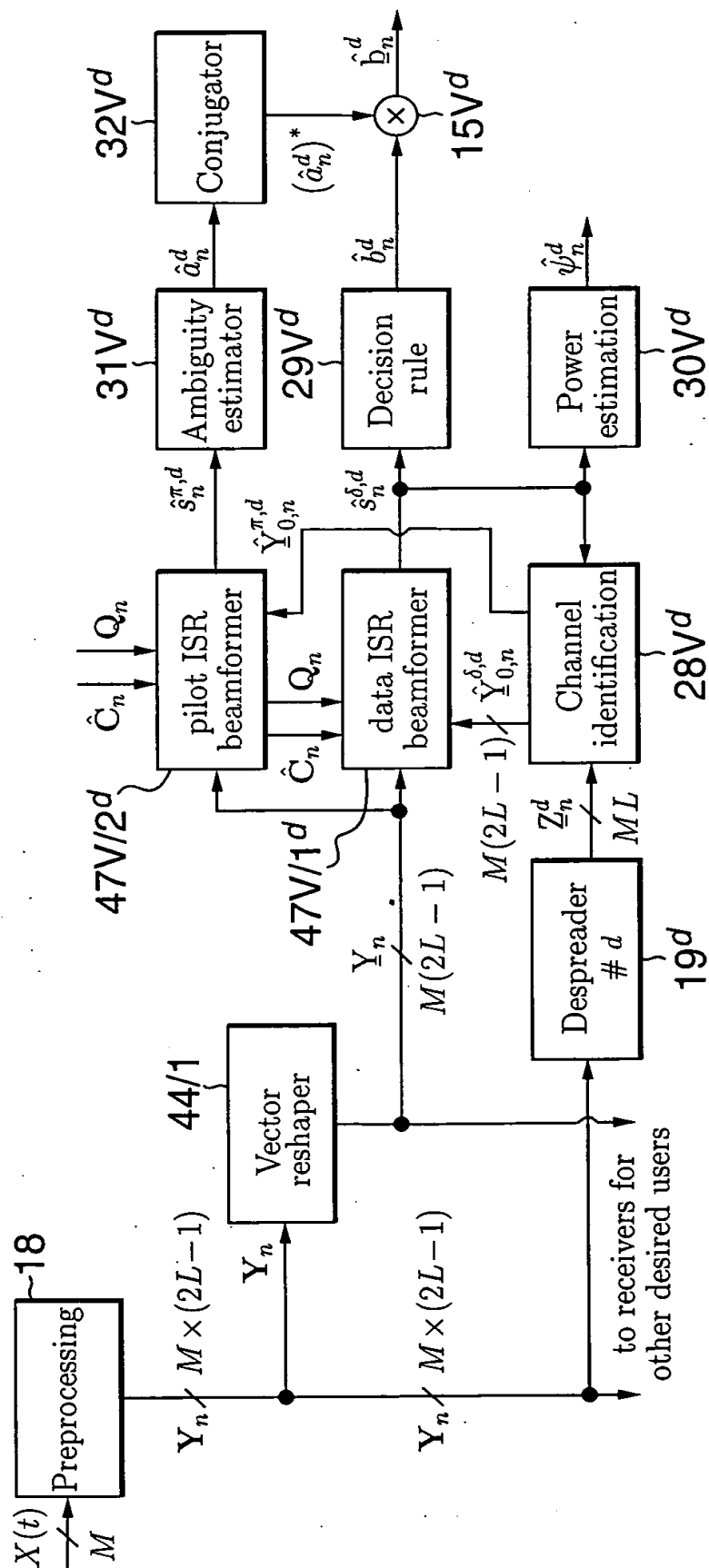


FIG. 43





**FIG. 46**

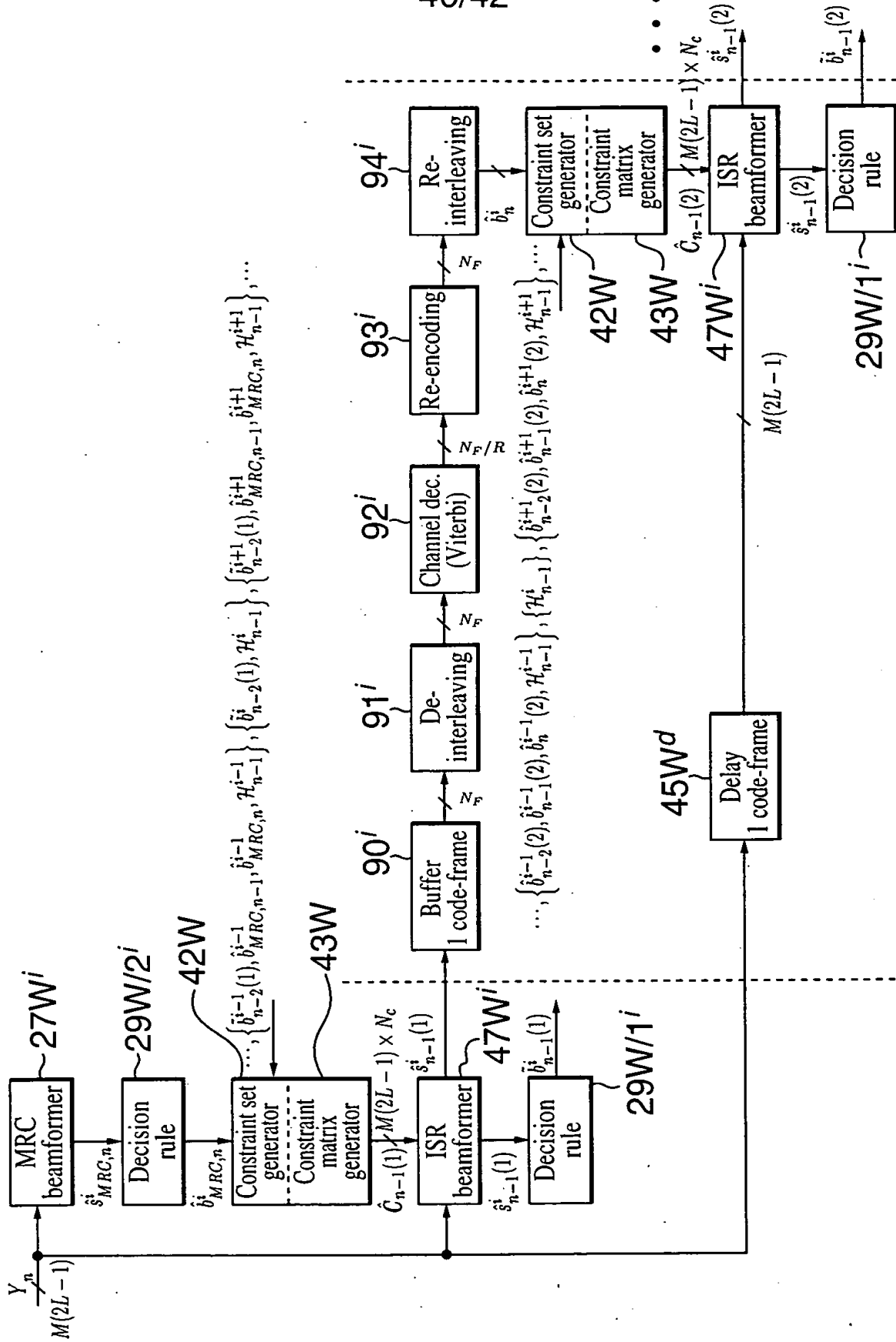


FIG. 47







**FIG. 49**